

INDEPENDENT ORBITER ASSESSMENT

ANALYSIS OF THE ELECTRICAL POWER DISTRIBUTION AND CONTROL SUBSYSTEM Vol. 2 of 2

3 APRIL 1987

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 2/1R
MDAC ID: 5803 ABORT: 2/1R

ITEM: FUSE, 1A TO MMCA-2 & 1
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONT BUS CA2
- 2) R13A2 PANEL
- 3) FUSE, 1A TO MMCA-2 & 1
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	2/1R	AOA:	2/1R
DEORBIT:	3/3	ATO:	2/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 32V73A13A2F34
PART NUMBER: ME451-0018-0100

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE THE LOSS OF ONE PLBM AC BUS. CRITICAL LOADS HAVE DUAL POWER SOURCES. SECOND FAILURE WOULD NOT ALLOW PAYLOAD DOORS TO CLOSE. THIS COULD RESULT IN LOSS OF CREW/VEHICLE.

REFERENCES: 76BC14F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 2/1R
MDAC ID: 5804 ABORT: 2/1R

ITEM: FUSE, 1A TO MMCA-2 & 1
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONT BUS AB2
- 2) R13A2 PANEL
- 3) FUSE, 1A TO MMCA-2 & 1
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	2/1R	AOA:	2/1R
DEORBIT:	3/3	ATO:	2/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 32V73A13A2F33
PART NUMBER: ME451-0018-0100

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE THE LOSS OF ONE PLBM AC BUS. CRITICAL LOADS HAVE DUAL POWER SOURCES. SECOND FAILURE WOULD NOT ALLOW PAYLOAD DOORS TO CLOSE. THIS COULD RESULT IN LOSS OF CREW/VEHICLE.

REFERENCES: 76BC14F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 2/1R
MDAC ID: 5805 ABORT: 2/1R

ITEM: FUSE, 1A TO MMCA-4 & 3
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONT BUS CAL
- 2) R13A2 PANEL
- 3) FUSE, 1A TO MMCA-4 & 3
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	2/1R	AOA:	2/1R
DEORBIT:	3/3	ATO:	2/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 32V73A13A2F18
PART NUMBER: ME451-0018-0100

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE THE LOSS OF ONE PLBM AC BUS. CRITICAL LOADS HAVE DUAL POWER SOURCES. SECOND FAILURE WOULD NOT ALLOW PAYLOAD DOORS TO CLOSE. THIS COULD RESULT IN LOSS OF CREW/VEHICLE.

REFERENCES: 76BC14E

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 2/1R
MDAC ID: 5806 ABORT: 2/1R

ITEM: FUSE, 1A TO MMCA-4 & 3
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONT BUS AB1
- 2) R13A2 PANEL
- 3) FUSE, 1A TO MMCA-4 & 3
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	2/1R	AOA:	2/1R
DEORBIT:	3/3	ATO:	2/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 32V73A13A2F35
PART NUMBER: ME451-0018-0100

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE THE LOSS OF ONE PLBM AC BUS. CRITICAL LOADS HAVE DUAL POWER SOURCES. SECOND FAILURE WOULD NOT ALLOW PAYLOAD DOORS TO CLOSE. THIS COULD RESULT IN LOSS OF CREW/VEHICLE.

REFERENCES: 76BC14E

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 2/1R
MDAC ID: 5807 ABORT: 2/1R

ITEM: FUSE, 1A TO MMCA-4 & 3
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONT BUS BC2
- 2) R13A2 PANEL
- 3) FUSE, 1A TO MMCA-4 & 3
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	2/1R	AOA:	2/1R
DEORBIT:	3/3	ATO:	2/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 32V73A13A2F28
PART NUMBER: ME451-0018-0100

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE THE LOSS OF ONE PLBM AC BUS. CRITICAL LOADS HAVE DUAL POWER SOURCES. SECOND FAILURE WOULD NOT ALLOW PAYLOAD DOORS TO CLOSE. THIS COULD RESULT IN LOSS OF CREW/VEHICLE.

REFERENCES: 76BC14D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 2/1R
MDAC ID: 5808 ABORT: 2/1R

ITEM: FUSE, 1A TO MMCA-4 & 3
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONT BUS BC1
- 2) R13A2 PANEL
- 3) FUSE, 1A TO MMCA-4 & 3
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	2/1R	AOA:	2/1R
DEORBIT:	3/3	ATO:	2/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 32V73A13A2F6
PART NUMBER: ME451-0018-0100

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE THE LOSS OF ONE PLBM AC BUS. CRITICAL LOADS HAVE DUAL POWER SOURCES. SECOND FAILURE WOULD NOT ALLOW PAYLOAD DOORS TO CLOSE. THIS COULD RESULT IN LOSS OF CREW/VEHICLE.

REFERENCES: 76BC14C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 2/1R
MDAC ID: 5809 ABORT: 2/1R

ITEM: FUSE, 1A TO MMCA-4 & 3
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONT BUS AB2
- 2) R13A2 PANEL
- 3) FUSE, 1A TO MMCA-4 & 3
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	2/1R	AOA:	2/1R
DEORBIT:	3/3	ATO:	2/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 32V73A13A2F12
PART NUMBER: ME451-0018-0100

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE THE LOSS OF ONE PLBM AC BUS. CRITICAL LOADS HAVE DUAL POWER SOURCES. SECOND FAILURE WOULD NOT ALLOW PAYLOAD DOORS TO CLOSE. THIS COULD RESULT IN LOSS OF CREW/VEHICLE.

REFERENCES: 76BC14B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 2/1R
MDAC ID: 5810 ABORT: 2/1R

ITEM: FUSE, 1A TO MMCA-4 & 3
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONT BUS CA2
- 2) R13A2 PANEL
- 3) FUSE, 1A TO MMCA-4 & 3
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	2/1R	AOA:	2/1R
DEORBIT:	3/3	ATO:	2/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 32V73A13A2F31
PART NUMBER: ME451-0018-0100

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE THE LOSS OF ONE PLBM AC BUS. CRITICAL LOADS HAVE DUAL POWER SOURCES. SECOND FAILURE WOULD NOT ALLOW PAYLOAD DOORS TO CLOSE. THIS COULD RESULT IN LOSS OF CREW/VEHICLE.

REFERENCES: 76BC14B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 5811 ABORT: 3/3

ITEM: DIODE, ISOLATION 3A
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONT BUS AB1
- 2) R13A2 PANEL
- 3) DIODE, ISOLATION 3A
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/1R	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [2] B [F] C [P]

LOCATION: 32V73A13A2A4CR1
PART NUMBER: JANTXV1N5551

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE OF TWO POWER SOURCES TO RELAYS THAT CONTROL THREE PHASE AC POWER TO THE PLBM BUSES. CRITICAL LOADS ARE SUPPLIED BY REDUNDANT PLBM BUSES. THIRD FAILURE IN CONTROL CIRCUIT COULD CAUSE THE LOSS OF TWO PLBM BUSES AND MAY CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO CLOSE DOORS PRIOR TO ENTRY.

REFERENCES: 76BC14H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 5812 ABORT: 3/3

ITEM: DIODE, ISOLATION 3A
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONT BUS AB1
- 2) R13A2 PANEL
- 3) DIODE, ISOLATION 3A
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	HDW/FUNC	CRITICALITIES ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/1R	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [3] B [F] C [P]

LOCATION: 32V73A13A2A4CR1
PART NUMBER: JANTXV1N5551

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD TIE TWO CONTROL BUSES TOGETHER WHICH MAY CAUSE THE FUSE TO BLOW. THIS WOULD CAUSE THE LOSS OF REDUNDANT POWER TO THE PLBM BUSES IN TWO MCAS. A THIRD FAILURE COULD CAUSE THE LOSS OF TWO PLBM BUSES WHICH MAY CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO CLOSE DOORS PRIOR TO RENTRY.

REFERENCES: 76BC14H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 5813 ABORT: 3/3

ITEM: DIODE, ISOLATION 3A
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONT BUS CA1
- 2) R13A2 PANEL
- 3) DIODE, ISOLATION 3A
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/1R	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [3] B [F] C [P]

LOCATION: 32V73A13A2A4CR2
PART NUMBER: JANTXV1N5551

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD TIE TWO CONTROL BUSES TOGETHER WHICH MAY CAUSE THE FUSE TO BLOW. THIS WOULD CAUSE THE LOSS OF REDUNDANT POWER TO THE PLBM BUSES IN TWO MCAS. A THIRD FAILURE COULD CAUSE THE LOSS OF TWO PLBM BUSES WHICH MAY CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO CLOSE DOORS PRIOR TO RENTRY.

REFERENCES: 76BC14H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE:	3/11/87	HIGHEST CRITICALITY	HDW/FUNC
SUBSYSTEM:	EPD&C	FLIGHT:	3/1R
MDAC ID:	5814	ABORT:	3/3

ITEM: DIODE, ISOLATION 3A
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONT BUS CA1
- 2) R13A2 PANEL
- 3) DIODE, ISOLATION 3A
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/1R	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [2] B [F] C [P]

LOCATION: 32V73A13A2A4CR2
PART NUMBER: JANTXV1N5551

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE OF TWO POWER SOURCES TO RELAYS THAT CONTROL THREE PHASE AC POWER TO THE PLBM BUSES. CRITICAL LOADS ARE SUPPLIED BY REDUNDANT PLBM BUSES. THIRD FAILURE IN CONTROL CIRCUIT COULD CAUSE THE LOSS OF TWO PLBM BUSES AND MAY CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO CLOSE DOORS PRIOR TO ENTRY.

REFERENCES: 76BC14H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 5815 ABORT: 3/3

ITEM: DIODE, ISOLATION 3A
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONT BUS AB2
- 2) R13A2 PANEL
- 3) DIODE, ISOLATION 3A
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/1R	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [2] B [F] C [P]

LOCATION: 32V73A13A2A4CR3
PART NUMBER: JANTXV1N5551

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE OF TWO POWER SOURCES TO RELAYS THAT CONTROL THREE PHASE AC POWER TO THE PLBM BUSES. CRITICAL LOADS ARE SUPPLIED BY REDUNDANT PLBM BUSES. THIRD FAILURE IN CONTROL CIRCUIT COULD CAUSE THE LOSS OF TWO PLBM BUSES AND MAY CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO CLOSE DOORS PRIOR TO ENTRY.

REFERENCES: 76BC14F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 5816 ABORT: 3/3

ITEM: DIODE, ISOLATION 3A
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONT BUS AB2
- 2) R13A2 PANEL
- 3) DIODE, ISOLATION 3A
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/1R	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [3] B [F] C [P]

LOCATION: 32V73A13A2A4CR3
PART NUMBER: JANTXV1N5551

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD TIE TWO CONTROL BUSES TOGETHER WHICH MAY CAUSE THE FUSE TO BLOW. THIS WOULD CAUSE THE LOSS OF REDUNDANT POWER TO THE PLBM BUSES IN TWO MCAS. A THIRD FAILURE COULD CAUSE THE LOSS OF TWO PLBM BUSES WHICH MAY CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO CLOSE DOORS PRIOR TO RENTRY.

REFERENCES: 76BC14F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 5817 ABORT: 3/3

ITEM: DIODE, ISOLATION 3A
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONT BUS CA2
- 2) R13A2 PANEL
- 3) DIODE, ISOLATION 3A
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/1R	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [3] B [F] C [P]

LOCATION: 32V73A13A2A4CR4
PART NUMBER: JANTXV1N5551

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD TIE TWO CONTROL BUSES TOGETHER WHICH MAY CAUSE THE FUSE TO BLOW. THIS WOULD CAUSE THE LOSS OF REDUNDANT POWER TO THE PLBM BUSES IN TWO MCAS. A THIRD FAILURE COULD CAUSE THE LOSS OF TWO PLBM BUSES WHICH MAY CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO CLOSE DOORS PRIOR TO RENTRY.

REFERENCES: 76BC14F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 5818 ABORT: 3/3

ITEM: DIODE, ISOLATION 3A
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONT BUS CA2
- 2) R13A2 PANEL
- 3) DIODE, ISOLATION 3A
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/1R	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [2] B [F] C [P]

LOCATION: 32V73A13A2A4CR4
PART NUMBER: JANTXV1N5551

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE OF TWO POWER SOURCES TO RELAYS THAT CONTROL THREE PHASE AC POWER TO THE PLBM BUSSES. CRITICAL LOADS ARE SUPPLIED BY REDUNDANT PLBM BUSSES. THIRD FAILURE IN CONTROL CIRCUIT COULD CAUSE THE LOSS OF TWO PLBM BUSSES AND MAY CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO CLOSE DOORS PRIOR TO ENTRY.

REFERENCES: 76BC14F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 5819 ABORT: 3/3

ITEM: DIODE, ISOLATION 3A
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONT BUS CA2
- 2) R13A2 PANEL
- 3) DIODE, ISOLATION 3A
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/1R	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [2] B [F] C [P]

LOCATION: 32V73A13A2A5CR4
PART NUMBER: JANTXV1N5551

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE OF TWO POWER SOURCES TO RELAYS THAT CONTROL THREE PHASE AC POWER TO THE PLBM BUSES. CRITICAL LOADS ARE SUPPLIED BY REDUNDANT PLBM BUSES. THIRD FAILURE IN CONTROL CIRCUIT COULD CAUSE THE LOSS OF TWO PLBM BUSES AND MAY CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO CLOSE DOORS PRIOR TO ENTRY.

REFERENCES: 76BC14B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 5820 ABORT: 3/3

ITEM: DIODE, ISOLATION 3A
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONT BUS CA2
- 2) R13A2 PANEL
- 3) DIODE, ISOLATION 3A
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/1R	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [3] B [F] C [P]

LOCATION: 32V73A13A2A5CR4
PART NUMBER: JANTXV1N5551

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD TIE TWO CONTROL BUSES TOGETHER WHICH MAY CAUSE THE FUSE TO BLOW. THIS WOULD CAUSE THE LOSS OF REDUNDANT POWER TO THE PLBM BUSES IN TWO MCAS. A THIRD FAILURE COULD CAUSE THE LOSS OF TWO PLBM BUSES WHICH MAY CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO CLOSE DOORS PRIOR TO RENTRY.

REFERENCES: 76BC14B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 5821 ABORT: 3/3

ITEM: DIODE, ISOLATION 3A
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONT BUS AB2
- 2) R13A2 PANEL
- 3) DIODE, ISOLATION 3A
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/1R	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [3] B [F] C [P]

LOCATION: 32V73A13A2A5CR3
PART NUMBER: JANTXV1N5551

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD TIE TWO CONTROL BUSES TOGETHER WHICH MAY CAUSE THE FUSE TO BLOW. THIS WOULD CAUSE THE LOSS OF REDUNDANT POWER TO THE PLBM BUSES IN TWO MCAS. A THIRD FAILURE COULD CAUSE THE LOSS OF TWO PLBM BUSES WHICH MAY CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO CLOSE DOORS PRIOR TO RENTRY.

REFERENCES: 76BC14B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 5822 ABORT: 3/3

ITEM: DIODE, ISOLATION 3A
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONT BUS AB2
- 2) R13A2 PANEL
- 3) DIODE, ISOLATION 3A
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/1R	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [2] B [F] C [P]

LOCATION: 32V73A13A2A5CR3
PART NUMBER: JANTXV1N5551

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE OF TWO POWER SOURCES TO RELAYS THAT CONTROL THREE PHASE AC POWER TO THE PLBM BUSSES. CRITICAL LOADS ARE SUPPLIED BY REDUNDANT PLBM BUSSES. THIRD FAILURE IN CONTROL CIRCUIT COULD CAUSE THE LOSS OF TWO PLBM BUSSES AND MAY CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO CLOSE DOORS PRIOR TO ENTRY.

REFERENCES: 76BC14B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 5823 ABORT: 3/3

ITEM: DIODE, ISOLATION 3A
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONT BUS CA1
- 2) R13A2 PANEL
- 3) DIODE, ISOLATION 3A
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/1R	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [2] B [F] C [P]

LOCATION: 32V73A13A2A5CR2
PART NUMBER: JANTXV1N5551

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE OF TWO POWER SOURCES TO RELAYS THAT CONTROL THREE PHASE AC POWER TO THE PLBM BUSES. CRITICAL LOADS ARE SUPPLIED BY REDUNDANT PLBM BUSES. THIRD FAILURE IN CONTROL CIRCUIT COULD CAUSE THE LOSS OF TWO PLBM BUSES AND MAY CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO CLOSE DOORS PRIOR TO ENTRY.

REFERENCES: 76BC14E

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5824

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/1R
ABORT: 3/3

ITEM: DIODE, ISOLATION 3A
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER

SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONT BUS CA1
- 2) R13A2 PANEL
- 3) DIODE, ISOLATION 3A
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		
	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/1R	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [3] B [F] C [P]

LOCATION: 32V73A13A2A5CR2
PART NUMBER: JANTXV1N5551

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD TIE TWO CONTROL BUSES TOGETHER WHICH MAY CAUSE THE FUSE TO BLOW. THIS WOULD CAUSE THE LOSS OF REDUNDANT POWER TO THE PLBM BUSES IN TWO MCAS. A THIRD FAILURE COULD CAUSE THE LOSS OF TWO PLBM BUSES WHICH MAY CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO CLOSE DOORS PRIOR TO RENTRY.

REFERENCES: 76BC14E

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 5825 ABORT: 3/3

ITEM: DIODE, ISOLATION 3A
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONT BUS AB1
- 2) R13A2 PANEL
- 3) DIODE, ISOLATION 3A
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/1R	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [3] B [F] C [P]

LOCATION: 32V73A13A2A5CR1
PART NUMBER: JANTXV1N5551

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD TIE TWO CONTROL BUSES TOGETHER WHICH MAY CAUSE THE FUSE TO BLOW. THIS WOULD CAUSE THE LOSS OF REDUNDANT POWER TO THE PLBM BUSES IN TWO MCAS. A THIRD FAILURE COULD CAUSE THE LOSS OF TWO PLBM BUSES WHICH MAY CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO CLOSE DOORS PRIOR TO RENTRY.

REFERENCES: 76BC14E

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5826

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/1R
ABORT: 3/3

ITEM: DIODE, ISOLATION 3A
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER

SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONT BUS AB1
- 2) R13A2 PANEL
- 3) DIODE, ISOLATION 3A
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/1R	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [2] B [F] C [P]

LOCATION: 32V73A13A2A5CR1
PART NUMBER: JANTXV1N5551

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE OF TWO POWER SOURCES TO RELAYS THAT CONTROL THREE PHASE AC POWER TO THE PLBM BUSES. CRITICAL LOADS ARE SUPPLIED BY REDUNDANT PLBM BUSES. THIRD FAILURE IN CONTROL CIRCUIT COULD CAUSE THE LOSS OF TWO PLBM BUSES AND MAY CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO CLOSE DOORS PRIOR TO ENTRY.

REFERENCES: 76BC14E

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 2/1R
MDAC ID: 5827 ABORT: 2/1R

ITEM: SWITCH, TOGGLE 4PDT (P/L BAY MECH PWR SYS 1)
FAILURE MODE: FAILS OPEN OR SHORTS TO CASE

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONT BUSSES AB1, AB2, CA1, CA2, BC1, & BC2
- 2) R13A2 PANEL
- 3) SWITCH, TOGGLE 4PDT (P/L BAY MECH PWR SYS 1)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	2/2	TAL:	3/3
ONORBIT:	2/1R	AOA:	3/3
DEORBIT:	2/1R	ATO:	2/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 32V73A13A2S1
PART NUMBER: ME452-0102-7401

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK,
PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

FAILURE OF THIS ITEM WOULD CAUSE LOSS OF REDUNDANT AC PWR TO P/L
LOADS. THE SECOND FAILURE WOULD RESULT IN LOSS OF POWER TO CLOSE
P/L BAY DOORS AND/OR RETRACT FREON RADIATORS.

REFERENCES: 76BC13

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5828 ABORT: 3/3

ITEM: SWITCH, TOGGLE 4PDT (P/L BAY MECH PWR SYS 1)
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONT BUSES AB1, AB2, CA1, CA2, BC1, & BC2
- 2) R13A2 PANEL
- 3) SWITCH, TOGGLE 4PDT (P/L BAY MECH PWR SYS 1)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		
	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 32V73A13A2S1
PART NUMBER: ME452-0102-7401

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK,
PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

NO EFFECT FROM THIS FAILURE AS THE SWITCH IS NORMALLY "ON".

REFERENCES: 76BC13

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5829 ABORT: 3/3

ITEM: SWITCH, TOGGLE 4PDT (P/L BAY MECH PWR SYS 2)
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONT BUSSES AB1, AB2, CA1, CA2, BC1, & BC2
- 2) R13A2 PANEL
- 3) SWITCH, TOGGLE 4PDT (P/L BAY MECH PWR SYS 2)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 32V73A13A2S2
PART NUMBER: ME452-0102-7401

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK,
PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

NO EFFECT FROM THIS FAILURE AS THE SWITCH IS NORMALLY "ON".

REFERENCES: 76BC13

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 2/1R
MDAC ID: 5830 ABORT: 2/1R

ITEM: SWITCH, TOGGLE 4PDT (P/L BAY MECH PWR SYS 2)
FAILURE MODE: FAILS OPEN OR SHORTS TO CASE

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONT BUSSES AB1, AB2, CA1, CA2, BC1, & BC2
- 2) R13A2 PANEL
- 3) SWITCH, TOGGLE 4PDT (P/L BAY MECH PWR SYS 2)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	2/2	TAL:	3/3
ONORBIT:	2/1R	AOA:	3/3
DEORBIT:	2/1R	ATO:	2/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 32V73A13A2S2
PART NUMBER: ME452-0102-7401

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK,
PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

FAILURE OF THIS ITEM WOULD CAUSE LOSS OF REDUNDANT AC PWR TO P/L
LOADS. THE SECOND FAILURE WOULD RESULT IN LOSS OF POWER TO CLOSE
P/L BAY DOORS AND/OR RETRACT FREON RADIATORS.

REFERENCES: 76BC13

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 5831 ABORT: 3/1R

ITEM: CIRCUIT BREAKER, 3A (AC CONT 1 A)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) R1A1 PANEL
- 3) CIRCUIT BREAKER, 3A (AC CONT 1 A)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 32V73A1A1CB1
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF CONTROL POWER TO ONE INVERTER (ONE AC PHASE OF ONE AC BUS). SINCE THE INVERTERS ARE STARTED ON THE GROUND AND HAVE LATCHED POWER INPUTS, THIS FAILURE WOULD HAVE NO EFFECT ONCE THE INVERTERS WERE STARTED. HOWEVER, IF THIS FAILURE OCCURED AFTER A PHASE HAD TRIPPED OUT, THE PHASE COULD NOT BE RE-ENERGIZED. LOSS OF ALL CAPABILITY TO RE-POWER THE AC BUSES COULD RESULT IN LOSS OF CREW/VEHICLE.

REFERENCES: 76BF24H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5832 ABORT: 3/3

ITEM: CIRCUIT BREAKER, 3A (AC CONT 1 A)
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) R1A1 PANEL
- 3) CIRCUIT BREAKER, 3A (AC CONT 1 A)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		
	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 32V73A1A1CB1
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS CB IS CLOSED DURING NORMAL OPERATIONS AND THE CREW MAY SWITCH OUT THIS CIRCUIT WITH A TOGGLE SWITCH IN CASE OF AN OVERLOAD WHICH WOULD RESULT IN THE LOSS OF ONE PHASE OF THE AC BUS. SINCE MOST AC MOTORS CAN OPERATE ON TWO PHASES, THIS FAILURE PLUS AN OVERLOAD CONDITION WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BF24H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 5833 ABORT: 3/1R

ITEM: CIRCUIT BREAKER, 3A (AC CONT 1 B)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) R1A1 PANEL
- 3) CIRCUIT BREAKER, 3A (AC CONT 1 B)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	HDW/FUNC	CRITICALITIES	ABORT	HDW/FUNC
PRELAUNCH:	3/3		RTLS:	3/1R
LIFTOFF:	3/1R		TAL:	3/1R
ONORBIT:	3/1R		AOA:	3/1R
DEORBIT:	3/1R		ATO:	3/1R
LANDING/SAFING:	3/3			

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 32V73A1A1CB2
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF CONTROL POWER TO ONE INVERTER (ONE AC PHASE OF ONE AC BUS). SINCE THE INVERTERS ARE STARTED ON THE GROUND AND HAVE LATCHED POWER INPUTS, THIS FAILURE WOULD HAVE NO EFFECT ONCE THE INVERTERS WERE STARTED. HOWEVER, IF THIS FAILURE OCCURED AFTER A PHASE HAD TRIPPED OUT, THE PHASE COULD NOT BE RE-ENERGIZED. LOSS OF ALL CAPABILITY TO RE-POWER THE AC BUSES COULD RESULT IN LOSS OF CREW/VEHICLE.

REFERENCES: 76BF24E

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5834 ABORT: 3/3

ITEM: CIRCUIT BREAKER, 3A (AC CONT 1 B)
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) R1A1 PANEL
- 3) CIRCUIT BREAKER, 3A (AC CONT 1 B)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 32V73A1A1CB2
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS CB IS CLOSED DURING NORMAL OPERATIONS AND THE CREW MAY SWITCH OUT THIS CIRCUIT WITH A TOGGLE SWITCH IN CASE OF AN OVERLOAD WHICH WOULD RESULT IN THE LOSS OF ONE PHASE OF THE AC BUS. SINCE MOST AC MOTORS CAN OPERATE ON TWO PHASES, THIS FAILURE PLUS AN OVERLOAD CONDITION WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BF24E

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 5835 ABORT: 3/1R

ITEM: CIRCUIT BREAKER, 3A (AC CONT 1 C)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) R1A1 PANEL
- 3) CIRCUIT BREAKER, 3A (AC CONT 1 C)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 32V73A1A1CB3
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF CONTROL POWER TO ONE INVERTER (ONE AC PHASE OF ONE AC BUS). SINCE THE INVERTERS ARE STARTED ON THE GROUND AND HAVE LATCHED POWER INPUTS, THIS FAILURE WOULD HAVE NO EFFECT ONCE THE INVERTERS WERE STARTED. HOWEVER, IF THIS FAILURE OCCURED AFTER A PHASE HAD TRIPPED OUT, THE PHASE COULD NOT BE RE-ENERGIZED. LOSS OF ALL CAPABILITY TO RE-POWER THE AC BUSES COULD RESULT IN LOSS OF CREW/VEHICLE.

REFERENCES: 76BF24C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5836 ABORT: 3/3

ITEM: CIRCUIT BREAKER, 3A (AC CONT 1 C)
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) R1A1 PANEL
- 3) CIRCUIT BREAKER, 3A (AC CONT 1 C)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	HDW/FUNC	CRITICALITIES	HDW/FUNC
		ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 32V73A1A1CB3
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS CB IS CLOSED DURING NORMAL OPERATIONS AND THE CREW MAY SWITCH OUT THIS CIRCUIT WITH A TOGGLE SWITCH IN CASE OF AN OVERLOAD WHICH WOULD RESULT IN THE LOSS OF ONE PHASE OF THE AC BUS. SINCE MOST AC MOTORS CAN OPERATE ON TWO PHASES, THIS FAILURE PLUS AN OVERLOAD CONDITION WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BF24C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5837 ABORT: 3/3

ITEM: SWITCH, TOGGLE 3PDT (INVERTER PWR #1)
FAILURE MODE: FAILS TO TRANSFER

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) R1A1 PANEL
- 3) MAIN DC DIST ASSY #1
- 4) SWITCH, TOGGLE 3PDT (INVERTER PWR #1)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 32V73A1A1S16
PART NUMBER: ME452-0102-7305

CAUSES: PIECE PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK,
CONTAMINATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT DURING NORMAL FLIGHT OPERATIONS
AS THE AC INVERTERS ARE LATCHED ON DURING PRE-LAUNCH. ALTERNATE
MEANS OF REMOVING A PHASE FROM THE AC BUS EXIST.

REFERENCES: 76BF24

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 5838 ABORT: 3/1R

ITEM: SWITCH, TOGGLE 3PDT (INVERTER PWR #1)
FAILURE MODE: INADVERTENT TRANSFER

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) R1A1 PANEL
- 3) MAIN DC DIST ASSY #1
- 4) SWITCH, TOGGLE 3PDT (INVERTER PWR #1)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 32V73A1A1S16
PART NUMBER: ME452-0102-7305

CAUSES: PIECE PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK,
CONTAMINATION

EFFECTS/RATIONALE:

IF THIS FAILURE OCCURS TO THE "OFF" SIDE OF THE SWITCH, AT LEAST ONE INVERTER WILL BE SHUT DOWN AND COULD NOT BE RESTARTED. LOSS OF ALL REDUNDANCY MAY CAUSE LOSS OF CREW/VEHICLE DUE TO LOSS OF POWER TO CRITICAL LOADS.

REFERENCES: 76BF24

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5839 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE I (MN A TO INV 1 ON)
FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) ESS BUS 1BC
- 3) FLCA-1
- 4) HYBRID DRIVER TYPE I (MN A TO INV 1 ON)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A16AR4
PART NUMBER: MC477-0261-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,
PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS ITEM IS USED FOR GROUND C/O ONLY AND IS NON-CRITICAL FOR
FLIGHT OPERATIONS.

REFERENCES: 76BF18F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5840 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE I (MN A TO INV 1 ON)
FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) ESS BUS 1BC
- 3) FLCA-1
- 4) HYBRID DRIVER TYPE I (MN A TO INV 1 ON)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A16AR4
PART NUMBER: MC477-0261-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,
PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:
THIS ITEM IS USED FOR GROUND C/O ONLY AND IS NON-CRITICAL FOR
FLIGHT OPERATIONS.

REFERENCES: 76BF18F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5841 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE I (MN A TO INV 1 OFF)
FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE PWR
- 2) PRE-FLIGHT TEST BUS #1
- 3) FLCA-1
- 4) HYBRID DRIVER TYPE I (MN A TO INV 1 OFF)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A16AR5
PART NUMBER: MC477-0261-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,
PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS ITEM IS USED FOR GROUND C/O ONLY AND IS NON-CRITICAL FOR
FLIGHT OPERATIONS.

REFERENCES: 76BF18G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5842 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE I (MN A TO INV 1 OFF)
FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE PWR
- 2) PRE-FLIGHT TEST BUS #1
- 3) FLCA-1
- 4) HYBRID DRIVER TYPE I (MN A TO INV 1 OFF)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		
	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A16AR5
PART NUMBER: MC477-0261-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,
PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS ITEM IS USED FOR GROUND C/O ONLY AND IS NON-CRITICAL FOR
FLIGHT OPERATIONS.

REFERENCES: 76BF18G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5843 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE II (INV 1 A ON)
FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) FLCA-1
- 3) HYBRID DRIVER TYPE II (INV 1 A ON)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A16AR11
PART NUMBER: MC477-0262-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,
PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE LOSS OF INVERTER CONTROL INPUT SUCH THAT
THE INVERTER COULD NOT BE TURNED OFF. NORMAL FLIGHT PROCEDURE IS
TO LEAVE INVERTER RUNNING AND DISCONNECT ITS OUTPUT IF REQUIRED.
NO EFFECT ON CREW/VEHICLE/MISSION.

REFERENCES: 76BF17G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5844 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE II (INV 1 A ON)
FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) FLCA-1
- 3) HYBRID DRIVER TYPE II (INV 1 A ON)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A16AR11
PART NUMBER: MC477-0262-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,
PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF FULL INPUT POWER TO THE INVERTER (7.5A STILL AVAILABLE), CAUSING A LOW POWER PHASE ON ONE AC BUS. SINCE THE INVERTERS ARE STARTED ON THE GROUND AND LATCHED ON, THIS FAILURE WOULD HAVE NO EFFECT DURING NORMAL FLIGHT.

THIS FAILURE WOULD NOT BE DETECTABLE UNLESS AN INVERTER IS POWERED DOWN AND A RESTART IS ATTEMPTED. THIS IS AN OFF-NOMINAL PROCEDURE.

REFERENCES: 76BF17G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5845 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE II (INV 1 B ON)
FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) FLCA-1
- 3) HYBRID DRIVER TYPE II (INV 1 B ON)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A16AR12
PART NUMBER: MC477-0262-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,
PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE LOSS OF INVERTER CONTROL INPUT SUCH THAT
THE INVERTER COULD NOT BE TURNED OFF. NORMAL FLIGHT PROCEDURE IS
TO LEAVE INVERTER RUNNING AND DISCONNECT ITS OUTPUT IF REQUIRED.
NO EFFECT ON CREW/VEHICLE/MISSION.

REFERENCES: 76BF17D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5846 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE II (INV 1 B ON)
FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) FLCA-1
- 3) HYBRID DRIVER TYPE II (INV 1 B ON)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A16AR12
PART NUMBER: MC477-0262-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,
PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF FULL INPUT POWER TO THE INVERTER (7.5A STILL AVAILABLE), CAUSING A LOW POWER PHASE ON ONE AC BUS. SINCE THE INVERTERS ARE STARTED ON THE GROUND AND LATCHED ON, THIS FAILURE WOULD HAVE NO EFFECT DURING NORMAL FLIGHT.

THIS FAILURE WOULD NOT BE DETECTABLE UNLESS AN INVERTER IS POWERED DOWN AND A RESTART IS ATTEMPTED. THIS IS AN OFF-NOMINAL PROCEDURE.

REFERENCES: 76BF17D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5847 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE II (INV 1 C ON)
FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) FLCA-1
- 3) HYBRID DRIVER TYPE II (INV 1 C ON)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A16AR13
PART NUMBER: MC477-0262-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,
PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE LOSS OF INVERTER CONTROL INPUT SUCH THAT
THE INVERTER COULD NOT BE TURNED OFF. NORMAL FLIGHT PROCEDURE IS
TO LEAVE INVERTER RUNNING AND DISCONNECT ITS OUTPUT IF REQUIRED.
NO EFFECT ON CREW/VEHICLE/MISSION.

REFERENCES: 76BF17A

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5848 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE II (INV 1 C ON)
FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) FLCA-1
- 3) HYBRID DRIVER TYPE II (INV 1 C ON)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A16AR13
PART NUMBER: MC477-0262-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,
PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF FULL INPUT POWER TO THE INVERTER (7.5A STILL AVAILABLE), CAUSING A LOW POWER PHASE ON ONE AC BUS. SINCE THE INVERTERS ARE STARTED ON THE GROUND AND LATCHED ON, THIS FAILURE WOULD HAVE NO EFFECT DURING NORMAL FLIGHT.

THIS FAILURE WOULD NOT BE DETECTABLE UNLESS AN INVERTER IS POWERED DOWN AND A RESTART IS ATTEMPTED. THIS IS AN OFF-NOMINAL PROCEDURE.

REFERENCES: 76BF17A

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5849 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE III (INV 1 A ON)
FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) FLCA-1
- 3) HYBRID DRIVER TYPE III (INV 1 A ON)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES	
	HDW/FUNC	ABORT
PRELAUNCH:	3/3	RTLS: 3/3
LIFTOFF:	3/3	TAL: 3/3
ONORBIT:	3/3	AOA: 3/3
DEORBIT:	3/3	ATO: 3/3
LANDING/SAFING:	3/3	

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A16AR14
PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,
PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF INPUT POWER CONTROL TO THE
INVERTER. NO EFFECT SINCE INVERTERS ARE STARTED ON THE GROUND
AND KEPT ON DURING A FLIGHT.

REFERENCES: 76BF16G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5850 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE III (INV 1 A ON)
FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) FLCA-1
- 3) HYBRID DRIVER TYPE III (INV 1 A ON)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A16AR14
PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,
PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF FULL POWER TO AN AC INVERTER (7.5A STILL AVAILABLE). WORST CASE IS THE LOSS OF ONE INVERTER BECAUSE IT COULD NOT BE RESTARTED WITH FULL POWER. INVERTERS ARE STARTED ON THE GROUND AND NORMALLY KEPT ON DURING A FLIGHT.

REFERENCES: 76BF16G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5851 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE III (INV 1 B ON)
FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) FLCA-1
- 3) HYBRID DRIVER TYPE III (INV 1 B ON)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A16AR15
PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,
PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF INPUT POWER CONTROL TO THE
INVERTER. NO EFFECT SINCE INVERTERS ARE STARTED ON THE GROUND
AND KEPT ON DURING A FLIGHT.

REFERENCES: 76BF16D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5852 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE III (INV 1 B ON)
FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) FLCA-1
- 3) HYBRID DRIVER TYPE III (INV 1 B ON)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A16AR15
PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,
PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF FULL POWER TO AN AC INVERTER (7.5A STILL AVAILABLE). WORST CASE IS THE LOSS OF ONE INVERTER BECAUSE IT COULD NOT BE RESTARTED WITH FULL POWER. INVERTERS ARE STARTED ON THE GROUND AND NORMALLY DEPT ON DURING A FLIGHT.

REFERENCES: 76BF16D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5853 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE III (INV 1 C ON)
FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) FLCA-1
- 3) HYBRID DRIVER TYPE III (INV 1 C ON)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES	
	HDW/FUNC	ABORT
PRELAUNCH:	3/3	RTLS: 3/3
LIFTOFF:	3/3	TAL: 3/3
ONORBIT:	3/3	AOA: 3/3
DEORBIT:	3/3	ATO: 3/3
LANDING/SAFING:	3/3	

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A16AR16
PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,
PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF INPUT POWER CONTROL TO THE
INVERTER. NO EFFECT SINCE INVERTERS ARE STARTED ON THE GROUND
AND KEPT ON DURING A FLIGHT.

REFERENCES: 76BF16B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5854 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE III (INV 1 C ON)
FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) FLCA-1
- 3) HYBRID DRIVER TYPE III (INV 1 C ON)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A16AR16
PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,
PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF FULL POWER TO AN AC INVERTER (7.5A STILL AVAILABLE). WORST CASE IS THE LOSS OF ONE INVERTER BECAUSE IT COULD NOT BE RESTARTED WITH FULL POWER. INVERTERS ARE STARTED ON THE GROUND AND NORMALLY KEPT ON DURING A FLIGHT.

REFERENCES: 76BF16B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 5855 ABORT: 3/1R

ITEM: HYBRID DRIVER TYPE III (INV 1 A OFF)
FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) FLCA-1
- 3) HYBRID DRIVER TYPE III (INV 1 A OFF)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 81V76A16AR17
PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,
PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD ENERGIZE THE "OFF" RELAY TO THE INVERTER
RESULTING IN THE LOSS OF ONE PHASE OF A THREE PHASE AC BUS. LOSS
OF ALL AC POWER COULD CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY
TO POWER CRITICAL LOADS.

REFERENCES: 76BF16H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5856 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE III (INV 1 A OFF)
FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) FLCA-1
- 3) HYBRID DRIVER TYPE III (INV 1 A OFF)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		
	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A16AR17
PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,
PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF ABILITY TO TURN THE INVERTER OFF. NO EFFECT ON CREW/MISSION/VEHICLE SINCE THE INVERTER OUTPUT CAN BE DISCONNECTED FROM ITS LOADS. INVERTERS ARE STARTED ON THE GROUND AND KEPT ON DURING A FLIGHT.

REFERENCES: 76BF16H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 5857 ABORT: 3/1R

ITEM: HYBRID DRIVER TYPE III (INV 1 B OFF)
FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) FLCA-1
- 3) HYBRID DRIVER TYPE III (INV 1 B OFF)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 81V76A16AR18
PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,
PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD ENERGIZE THE "OFF" RELAY TO THE INVERTER
RESULTING IN THE LOSS OF ONE PHASE OF A THREE PHASE AC BUS. LOSS
OF ALL AC POWER COULD CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY
TO POWER CRITICAL LOADS.

REFERENCES: 76BF16E

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5858 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE III (INV 1 B OFF)
FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) FLCA-1
- 3) HYBRID DRIVER TYPE III (INV 1 B OFF)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A16AR18
PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,
PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF ABILITY TO TURN THE INVERTER OFF. NO EFFECT ON CREW/MISSION/VEHICLE SINCE THE INVERTER OUTPUT CAN BE DISCONNECTED FROM ITS LOADS. INVERTERS ARE STARTED ON THE GROUND AND KEPT ON DURING A FLIGHT.

REFERENCES: 76BF16E

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 5859 ABORT: 3/1R

ITEM: HYBRID DRIVER TYPE III (INV 1 C OFF)
FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) FLCA-1
- 3) HYBRID DRIVER TYPE III (INV 1 C OFF)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 81V76A16AR19
PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,
PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD ENERGIZE THE "OFF" RELAY TO THE INVERTER
RESULTING IN THE LOSS OF ONE PHASE OF A THREE PHASE AC BUS. LOSS
OF ALL AC POWER COULD CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY
TO POWER CRITICAL LOADS.

REFERENCES: 76BF16B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5860 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE III (INV 1 C OFF)
FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) FLCA-1
- 3) HYBRID DRIVER TYPE III (INV 1 C OFF)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A16AR19
PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,
PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF ABILITY TO TURN THE INVERTER OFF. NO EFFECT ON CREW/MISSION/VEHICLE SINCE THE INVERTER OUTPUT CAN BE DISCONNECTED FROM ITS LOADS. INVERTERS ARE STARTED ON THE GROUND AND KEPT ON DURING A FLIGHT.

REFERENCES: 76BF16B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 5861 ABORT: 3/1R

ITEM: RELAY, LATCHING TO INVERTER 1A
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) R1A1 PANEL
- 3) FLCA-1
- 4) FPCA-1
- 5) RELAY, LATCHING TO INVERTER 1A
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 81V76A22K1
PART NUMBER: MC455-0128-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE LOSS OF DC POWER TO THE INVERTER
RESULTING IN THE LOSS IN ONE PHASE OF THE THREE PHASE AC BUS.
REDUNDANT POWER IS AVAILABLE FOR CRITICAL LOADS. LOSS OF ALL
REDUNDANCY MAY CAUSE LOSS OF CREW/VEHICLE DUE TO LOSS OF POWER TO
CRITICAL LOADS.

REFERENCES: 76BF13H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5862 ABORT: 3/3

ITEM: RELAY, LATCHING TO INVERTER 1A
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) R1A1 PANEL
- 3) FLCA-1
- 4) FPCA-1
- 5) RELAY, LATCHING TO INVERTER 1A
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A22K1
PART NUMBER: MC455-0128-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD PREVENT REMOVING DC POWER TO THE INPUT OF THE
INVERTER. NO EFFECT ON CREW/MISSION/VEHICLE AS THIS IS NORMAL
FLIGHT CONFIGURATION.

REFERENCES: 76BF13H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 5863 ABORT: 3/1R

ITEM: RELAY, LATCHING TO INVERTER 1B
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) R1A1 PANEL
- 3) FLCA-1
- 4) FPCA-1
- 5) RELAY, LATCHING TO INVERTER 1B
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 81V76A22K2
PART NUMBER: MC455-0128-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE LOSS OF DC POWER TO THE INVERTER
RESULTING IN THE LOSS IN ONE PHASE OF THE THREE PHASE AC BUS.
REDUNDANT POWER IS AVAILABLE FOR CRITICAL LOADS. LOSS OF ALL
REDUNDANCY MAY CAUSE LOSS OF CREW/VEHICLE DUE TO LOSS OF POWER TO
CRITICAL LOADS.

REFERENCES: 76BF13E

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5864 ABORT: 3/3

ITEM: RELAY, LATCHING TO INVERTER 1B
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) R1A1 PANEL
- 3) FLCA-1
- 4) FPCA-1
- 5) RELAY, LATCHING TO INVERTER 1B
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		
	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A22K2
PART NUMBER: MC455-0128-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD PREVENT REMOVING DC POWER TO THE INPUT OF THE
INVERTER. NO EFFECT ON CREW/MISSION/VEHICLE AS THIS IS NORMAL
FLIGHT CONFIGURATION.

REFERENCES: 76BF13E

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 5865 ABORT: 3/1R

ITEM: RELAY, LATCHING TO INVERTER 1C
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) R1A1 PANEL
- 3) FLCA-1
- 4) FPCA-1
- 5) RELAY, LATCHING TO INVERTER 1C
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 81V76A22K3
PART NUMBER: MC455-0128-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE LOSS OF DC POWER TO THE INVERTER
RESULTING IN THE LOSS IN ONE PHASE OF THE THREE PHASE AC BUS.
REDUNDANT POWER IS AVAILABLE FOR CRITICAL LOADS. LOSS OF ALL
REDUNDANCY MAY CAUSE LOSS OF CREW/VEHICLE DUE TO LOSS OF POWER TO
CRITICAL LOADS.

REFERENCES: 76BF13C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5866 ABORT: 3/3

ITEM: RELAY, LATCHING TO INVERTER 1C
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) R1A1 PANEL
- 3) FLCA-1
- 4) FPCA-1
- 5) RELAY, LATCHING TO INVERTER 1C
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A22K3
PART NUMBER: MC455-0128-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD PREVENT REMOVING DC POWER TO THE INPUT OF THE
INVERTER. NO EFFECT ON CREW/MISSION/VEHICLE AS THIS IS NORMAL
FLIGHT CONFIGURATION.

REFERENCES: 76BF13C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 5867 ABORT: 3/1R

ITEM: FUSE, 80A TO INV 1 A
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS A
- 2) MAIN DC DIST ASSY #1
- 3) FPCA-1
- 4) FUSE, 80A TO INV 1 A
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 81V76A22F1
PART NUMBER: ME451-0016-0080

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF ONE INVERTER AC PHASE OUTPUT. LOSS OF ALL REDUNDANCY WOULD LIKELY CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

REFERENCES: 76BF13H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 5868 ABORT: 3/1R

ITEM: FUSE, 80A TO INV 1 B
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS A
- 2) MAIN DC DIST ASSY #1
- 3) FPCA-1
- 4) FUSE, 80A TO INV 1 B
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 81V76A22F2
PART NUMBER: ME451-0016-0080

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF ONE INVERTER AC PHASE OUTPUT. LOSS OF ALL REDUNDANCY WOULD LIKELY CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

REFERENCES: 76BF13E

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 5869 ABORT: 3/1R

ITEM: FUSE, 80A TO INV 1 C
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS A
- 2) MAIN DC DIST ASSY #1
- 3) FPCA-1
- 4) FUSE, 80A TO INV 1 C
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 81V76A22F3
PART NUMBER: ME451-0016-0080

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF ONE INVERTER AC PHASE OUTPUT. LOSS OF ALL REDUNDANCY WOULD LIKELY CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

REFERENCES: 76BF13C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5870 ABORT: 3/3

ITEM: RESISTOR, 5.1K 1/4W (TO MDM OF1)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) MAIN DC DIST ASSY #1
- 3) FPCA-1
- 4) RESISTOR, 5.1K 1/4W (TO MDM OF1)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A22A1R66
PART NUMBER: RLR07C512GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS ITEM SUPPORTS A NON-CRITICAL MEASUREMENT FUNCTION.
ALTERNATE INDICATORS (TALKBACKS) PROVIDE THE SAME FUNCTION.

REFERENCES: 76BF12G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5871 ABORT: 3/3

ITEM: RESISTOR, 5.1K 1/4W (TO MDM OF1)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) MAIN DC DIST ASSY #1
- 3) FPCA-1
- 4) RESISTOR, 5.1K 1/4W (TO MDM OF1)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	HDW/FUNC	CRITICALITIES	HDW/FUNC
PRELAUNCH:	3/3	ABORT	
LIFTOFF:	3/3	RTLS:	3/3
ONORBIT:	3/3	TAL:	3/3
DEORBIT:	3/3	AOA:	3/3
LANDING/SAFING:	3/3	ATO:	3/3

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A22A1R67
PART NUMBER: RLR07C512GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS ITEM SUPPORTS A NON-CRITICAL MEASUREMENT FUNCTION.
ALTERNATE INDICATORS (TALKBACKS) PROVIDE THE SAME FUNCTION.

REFERENCES: 76BF12E

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5872 ABORT: 3/3

ITEM: RESISTOR, 5.1K 1/4W (TO MDM OF1)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) MAIN DC DIST ASSY #1
- 3) FPCA-1
- 4) RESISTOR, 5.1K 1/4W (TO MDM OF1)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A22A1R68
PART NUMBER: RLR07C512GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS ITEM SUPPORTS A NON-CRITICAL MEASUREMENT FUNCTION.
ALTERNATE INDICATORS (TALKBACKS) PROVIDE THE SAME FUNCTION.

REFERENCES: 76BF12B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5873 ABORT: 3/3

ITEM: DIODE, ISOLATION
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) R1A1 PANEL
- 3) FPCA-1
- 4) DIODE, ISOLATION
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A22A1CR1
PART NUMBER: JANTXV1N4246

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS IN A NON-CRITICAL MEASUREMENT CIRCUIT. ALTERNATE
MEANS OF MEASURING ARE AVAILABLE. NO EFFECT ON
CREW/MISSION/VEHICLE.

REFERENCES: 76BF13G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5874

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

ITEM: DIODE, ISOLATION
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER

SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) R1A1 PANEL
- 3) FPCA-1
- 4) DIODE, ISOLATION
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A22A1CR1
PART NUMBER: JANTXV1N4246

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS IN A NON-CRITICAL MEASUREMENT CIRCUIT. ALTERNATE
MEANS OF MEASURING ARE AVAILABLE. NO EFFECT ON
CREW/MISSION/VEHICLE.

REFERENCES: 76BF13G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5875

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

ITEM: DIODE, ISOLATION
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER

SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) R1A1 PANEL
- 3) FPCA-1
- 4) DIODE, ISOLATION
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES	
	HDW/FUNC	ABORT
PRELAUNCH:	3/3	RTLS: 3/3
LIFTOFF:	3/3	TAL: 3/3
ONORBIT:	3/3	AOA: 3/3
DEORBIT:	3/3	ATO: 3/3
LANDING/SAFING:	3/3	

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A22A1CR2
PART NUMBER: JANTXV1N4246

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS IN A NON-CRITICAL MEASUREMENT CIRCUIT. ALTERNATE
MEANS OF MEASURING ARE AVAILABLE. NO EFFECT ON
CREW/MISSION/VEHICLE.

REFERENCES: 76BF13D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5876

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

ITEM: DIODE, ISOLATION
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER

SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) R1A1 PANEL
- 3) FPCA-1
- 4) DIODE, ISOLATION
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A22A1CR2
PART NUMBER: JANTXV1N4246

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS IN A NON-CRITICAL MEASUREMENT CIRCUIT. ALTERNATE MEANS OF MEASURING ARE AVAILABLE. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BF13D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5877 ABORT: 3/3

ITEM: DIODE, ISOLATION
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) R1A1 PANEL
- 3) FPCA-1
- 4) DIODE, ISOLATION
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES	
	HDW/FUNC	ABORT
PRELAUNCH:	3/3	RTLS: 3/3
LIFTOFF:	3/3	TAL: 3/3
ONORBIT:	3/3	AOA: 3/3
DEORBIT:	3/3	ATO: 3/3
LANDING/SAFING:	3/3	

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A22A1CR3
PART NUMBER: JANTXV1N4246

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS IN A NON-CRITICAL MEASUREMENT CIRCUIT. ALTERNATE
MEANS OF MEASURING ARE AVAILABLE. NO EFFECT ON
CREW/MISSION/VEHICLE.

REFERENCES: 76BF13B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5878

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

ITEM: DIODE, ISOLATION
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER

SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) R1A1 PANEL
- 3) FPCA-1
- 4) DIODE, ISOLATION
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A22A1CR3
PART NUMBER: JANTXV1N4246

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS IN A NON-CRITICAL MEASUREMENT CIRCUIT. ALTERNATE
MEANS OF MEASURING ARE AVAILABLE. NO EFFECT ON
CREW/MISSION/VEHICLE.

REFERENCES: 76BF13B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5879 ABORT: 3/3

ITEM: RPC, 7.5A TO INV 1 A
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS A
- 2) MAIN DC DIST ASSY #1
- 3) FPCA-1
- 4) RPC, 7.5A TO INV 1 A
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		
	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A22RPC8
PART NUMBER: MC450-0017-1075

CAUSES: PIECE PART STRUCTURAL FAILURE, CONTAMINATION, MECH
SHOCK, THERMAL STRESS, VIBRATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD PREVENT THE AC INVERTER FROM BEING TURNED OFF.
HOWEVER THE INPUT CURRENT WOULD BE LIMITED TO 7.5 AMPS.
INVERTERS ARE NORMALLY ON DURING FLIGHT OPERATIONS, SO NO EFFECT
ON CREW/MISSION/VEHICLE.

REFERENCES: 76BF12F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5880 ABORT: 3/3

ITEM: RPC, 7.5A TO INV 1 A
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS A
- 2) MAIN DC DIST ASSY #1
- 3) FPCA-1
- 4) RPC, 7.5A TO INV 1 A
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A22RPC8
PART NUMBER: MC450-0017-1075

CAUSES: PIECE PART STRUCTURAL FAILURE, CONTAMINATION, MECH
SHOCK, THERMAL STRESS, VIBRATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF CURRENT SURGE PROTECTION ON THE INVERTER STARTUP. SINCE THE INVERTERS ARE STARTED ON THE GROUND, AN IN-FLIGHT FAILURE WOULD HAVE NO EFFECT. IF AN INVERTER RESTART IS NEEDED IN-FLIGHT, IT MAY BE DAMAGED OR LOST.

REFERENCES: 76BF12F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5881 ABORT: 3/3

ITEM: RPC, 7.5A TO INV 1 B
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS A
- 2) MAIN DC DIST ASSY #1
- 3) FPCA-1
- 4) RPC, 7.5A TO INV 1 B
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC	
PRELAUNCH:	3/3	RTLS:	3/3	
LIFTOFF:	3/3	TAL:	3/3	
ONORBIT:	3/3	AOA:	3/3	
DEORBIT:	3/3	ATO:	3/3	
LANDING/SAFING:	3/3			

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A22RPC9
PART NUMBER: MC450-0017-1075

CAUSES: PIECE PART STRUCTURAL FAILURE, CONTAMINATION, MECH
SHOCK, THERMAL STRESS, VIBRATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD PREVENT THE AC INVERTER FROM BEING TURNED OFF.
HOWEVER THE INPUT CURRENT WOULD BE LIMITED TO 7.5 AMPS.
INVERTERS ARE NORMALLY ON DURING FLIGHT OPERATIONS, SO NO EFFECT
ON CREW/MISSION/VEHICLE.

REFERENCES: 76BF12D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 5882

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

ITEM: RPC, 7.5A TO INV 1 B
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER

SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS A
- 2) MAIN DC DIST ASSY #1
- 3) FPCA-1
- 4) RPC, 7.5A TO INV 1 B
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A22RPC9
PART NUMBER: MC450-0017-1075

CAUSES: PIECE PART STRUCTURAL FAILURE, CONTAMINATION, MECH
SHOCK, THERMAL STRESS, VIBRATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF CURRENT SURGE PROTECTION ON
THE INVERTER STARTUP. SINCE THE INVERTERS ARE STARTED ON THE
GROUND AND IN-FLIGHT FAILURE WOULD HAVE NO EFFECT. IF AN
INVERTER RESTART IS NEEDED IN-FLIGHT, IT MAY BE DAMAGED OR LOST.

REFERENCES: 76BF12D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5883 ABORT: 3/3

ITEM: RPC, 7.5A TO INV 1 C
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS A
- 2) MAIN DC DIST ASSY #1
- 3) FPCA-1
- 4) RPC, 7.5A TO INV 1 C
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A22RPC10
PART NUMBER: MC450-0017-1075

CAUSES: PIECE PART STRUCTURAL FAILURE, CONTAMINATION, MECH
SHOCK, THERMAL STRESS, VIBRATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD PREVENT THE AC INVERTER FROM BEING TURNED OFF.
HOWEVER THE INPUT CURRENT WOULD BE LIMITED TO 7.5 AMPS.
INVERTERS ARE NORMALLY ON DURING FLIGHT OPERATIONS, SO NO EFFECT
ON CREW/MISSION/VEHICLE.

REFERENCES: 76BF12A

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5884 ABORT: 3/3

ITEM: RPC, 7.5A TO INV 1 C
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS A
- 2) MAIN DC DIST ASSY #1
- 3) FPCA-1
- 4) RPC, 7.5A TO INV 1 C
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A22RPC10
PART NUMBER: MC450-0017-1075

CAUSES: PIECE PART STRUCTURAL FAILURE, CONTAMINATION, MECH
SHOCK, THERMAL STRESS, VIBRATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF CURRENT SURGE PROTECTION ON THE INVERTER STARTUP. SINCE THE INVERTERS ARE STARTED ON THE GROUND, AN IN-FLIGHT FAILURE WOULD HAVE NO EFFECT. IF AN INVERTER RESTART IS NEEDED IN-FLIGHT, IT MAY BE DAMAGED OR LOST.

REFERENCES: 76BF12A

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 5885 ABORT: 3/1R

ITEM: INVERTER 1 A
FAILURE MODE: FAILS OFF, OUTPUT UNDER/OVER VOLTAGE

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) R1A1 PANEL
- 3) FLCA-1
- 4) FPCA-1
- 5) INVERTER 1 A
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 81V76A1
PART NUMBER: MC495-0012-0004

CAUSES: TEMPERATURE, MECH SHOCK, VIBRATION, PIECE-PART
STRUCTURAL FAILURE

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE THE LOSS OF ONE PHASE OF THE THREE PHASE AC BUSS. MOST MOTORS ON THE VEHICLE CAN OPERATE ON TWO PHASES. CRITICAL LOADS ARE REDUNDANTLY POWERED FROM THE OTHER TWO BUSES. LOSS OF ALL REDUNDANCY WOULD CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

REFERENCES: 76BF10H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5886 ABORT: 3/3

ITEM: INVERTER 1 A
FAILURE MODE: OVERLOAD SIGNAL FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) R1A1 PANEL
- 3) FLCA-1
- 4) FPCA-1
- 5) INVERTER 1 A
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A1
PART NUMBER: MC495-0012-0004

CAUSES: TEMPERATURE, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE PREVENTS THE AUTOMATIC CUT OFF OF THE OVERLOADED INVERTER. CREW MAY BE ABLE TO DETECT OVERLOAD CONDITION VIA OVER/UNDER VOLTAGE SENSORS.

REFERENCES: 76BF10H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 5887 ABORT: 3/1R

ITEM: INVERTER 1 A
FAILURE MODE: INADVERTENT OVERLOAD SIGNAL OUTPUT

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) R1A1 PANEL
- 3) FLCA-1
- 4) FPCA-1
- 5) INVERTER 1 A
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 81V76A1
PART NUMBER: MC495-0012-0004

CAUSES: TEMPERATURE, VIBRATION, MECH SHOCK, CONTAMINATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE ONE PHASE OF THE THREE PHASE AC BUS TO BE LOST. THE PHASE COULD BE RESTORED BY CREW ACTION AND THE SIGNAL INHIBITED. MULTIPLE FAILURES OF THIS MODE MAY CAUSE LOSS OF CREW VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

REFERENCES: 76BF10H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 5888 ABORT: 3/1R

ITEM: INVERTER 1 A
FAILURE MODE: PHASE REF CHANGE

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) R1A1 PANEL
- 3) FLCA-1
- 4) FPCA-1
- 5) INVERTER 1 A
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 81V76A1
PART NUMBER: MC495-0012-0004

CAUSES: PIECE PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD PROBABLY CAUSE AN OVERLOAD SIGNAL TO BE OUTPUT AND ALL THREE PHASES OF ONE AC BUS WOULD BE CUT OFF. CRITICAL LOADS ARE REDUNDANTLY POWERED SO NO EFFECT ON FIRST FAILURE. LOSS OF ALL REDUNDANCY WOULD PROBABLY CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

REFERENCES: 76BF10H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 5889 ABORT: 3/1R

ITEM: INVERTER 1 B
FAILURE MODE: FAILS OFF, OUTPUT UNDER/OVER VOLTAGE

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) R1A1 PANEL
- 3) FLCA-1
- 4) FPCA-1
- 5) INVERTER 1 B
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		
	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 81V76A2
PART NUMBER: MC495-0012-0004

CAUSES: TEMPERATURE, MECH SHOCK, VIBRATION, PIECE-PART
STRUCTURAL FAILURE

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE THE LOSS OF ONE PHASE OF THE THREE
PHASE AC BUSS. MOST MOTORS ON THE VEHICLE CAN OPERATE ON TWO
PHASES. CRITICAL LOADS ARE REDUNDANTLY POWERED FROM THE OTHER TWO
BUSSES. LOSS OF ALL REDUNDANCY WOULD CAUSE LOSS OF CREW/VEHICLE
DUE TO INABILITY TO POWER CRITICAL LOADS.

REFERENCES: 76BF10E

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5890 ABORT: 3/3

ITEM: INVERTER 1 B
FAILURE MODE: OVERLOAD SIGNAL FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) R1A1 PANEL
- 3) FLCA-1
- 4) FPCA-1
- 5) INVERTER 1 B
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A2
PART NUMBER: MC495-0012-0004

CAUSES: TEMPERATURE, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE PREVENTS THE AUTOMATIC CUT OFF OF THE OVERLOADED INVERTER. CREW MAY BE ABLE TO DETECT OVERLOAD CONDITION VIA OVER/UNDER VOLTAGE SENSORS.

REFERENCES: 76BF10E

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 5891 ABORT: 3/1R

ITEM: INVERTER 1 B
FAILURE MODE: INADVERTENT OVERLOAD SIGNAL OUTPUT

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) R1A1 PANEL
- 3) FLCA-1
- 4) FPCA-1
- 5) INVERTER 1 B
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 81V76A2
PART NUMBER: MC495-0012-0004

CAUSES: TEMPERATURE, VIBRATION, MECH SHOCK, CONTAMINATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE ONE PHASE OF THE THREE PHASE AC BUS TO BE LOST. THE PHASE COULD BE RESTORED BY CREW ACTION AND THE SIGNAL INHIBITED. MULTIPLE FAILURES OF THIS MODE MAY CAUSE LOSS OF CREW VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

REFERENCES: 76BF10E

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 5892 ABORT: 3/1R

ITEM: INVERTER 1 B
FAILURE MODE: PHASE REF CHANGE

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) R1A1 PANEL
- 3) FLCA-1
- 4) FPCA-1
- 5) INVERTER 1 B
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 81V76A2
PART NUMBER: MC495-0012-0004

CAUSES: PIECE PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD PROBABLY CAUSE AN OVERLOAD SIGNAL TO BE OUTPUT AND ALL THREE PHASES OF ONE AC BUS WOULD BE CUT OFF. CRITICAL LOADS ARE REDUNDANTLY POWERED SO NO EFFECT ON FIRST FAILURE. LOSS OF ALL REDUNDANCY WOULD PROBABLY CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

REFERENCES: 76BF10E

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 5893 ABORT: 3/1R

ITEM: INVERTER 1 C
FAILURE MODE: FAILS OFF, OUTPUT UNDER/OVER VOLTAGE

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) R1A1 PANEL
- 3) FLCA-1
- 4) FPCA-1
- 5) INVERTER 1 C
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 81V76A3
PART NUMBER: MC495-0012-0004

CAUSES: TEMPERATURE, MECH SHOCK, VIBRATION, PIECE-PART
STRUCTURAL FAILURE

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE THE LOSS OF ONE PHASE OF THE THREE
PHASE AC BUSS. MOST MOTORS ON THE VEHICLE CAN OPERATE ON TWO
PHASES. CRITICAL LOADS ARE REDUNDANTLY POWERED FROM THE OTHER TWO
BUSSES. LOSS OF ALL REDUNDANCY WOULD CAUSE LOSS OF CREW/VEHICLE
DUE TO INABILITY TO POWER CRITICAL LOADS.

REFERENCES: 76BF10C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5894 ABORT: 3/3

ITEM: INVERTER 1 C
FAILURE MODE: OVERLOAD SIGNAL FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) R1A1 PANEL
- 3) FLCA-1
- 4) FPCA-1
- 5) INVERTER 1 C
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		
	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A3
PART NUMBER: MC495-0012-0004

CAUSES: TEMPERATURE, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE PREVENTS THE AUTOMATIC CUT OFF OF THE OVERLOADED INVERTER. CREW MAY BE ABLE TO DETECT OVERLOAD CONDITION VIA OVER/UNDER VOLTAGE SENSORS.

REFERENCES: 76BF10C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 5895 ABORT: 3/1R

ITEM: INVERTER 1 C
FAILURE MODE: INADVERTENT OVERLOAD SIGNAL OUTPUT

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) R1A1 PANEL
- 3) FLCA-1
- 4) FPCA-1
- 5) INVERTER 1 C
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 81V76A3
PART NUMBER: MC495-0012-0004

CAUSES: TEMPERATURE, VIBRATION, MECH SHOCK, CONTAMINATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE ONE PHASE OF THE THREE PHASE AC BUS TO BE LOST. THE PHASE COULD BE RESTORED BY CREW ACTION AND THE SIGNAL INHIBITED. MULTIPLE FAILURES OF THIS MODE MAY CAUSE LOSS OF CREW VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

REFERENCES: 76BF10C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 5896 ABORT: 3/1R

ITEM: INVERTER 1 C
FAILURE MODE: PHASE REF CHANGE

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) R1A1 PANEL
- 3) FLCA-1
- 4) FPCA-1
- 5) INVERTER 1 C
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 81V76A3
PART NUMBER: MC495-0012-0004

CAUSES: PIECE PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD PROBABLY CAUSE AN OVERLOAD SIGNAL TO BE OUTPUT AND ALL THREE PHASES OF ONE AC BUS WOULD BE CUT OFF. CRITICAL LOADS ARE REDUNDANTLY POWERED SO NO EFFECT ON FIRST FAILURE. LOSS OF ALL REDUNDANCY WOULD PROBABLY CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

REFERENCES: 76BF10C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 5897 ABORT: 3/1R

ITEM: SWITCH, TOGGLE 3PDT (INV/AC BUS 1)
FAILURE MODE: FAILS TO TRANSFER

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) R1A1 PANEL
- 3) MAIN DC DIST ASSY #1
- 4) SWITCH, TOGGLE 3PDT (INV/AC BUS 1)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 32V73A1A1S19
PART NUMBER: ME452-0102-7305

CAUSES: PIECE PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK,
CONTAMINATION

EFFECTS/RATIONALE:

IF THE AC BUS RELAY IS TRIPPED OFF BY THE AC OVER/UNDER VOLTAGE
SENSOR AND THIS FAILURE OCCURS, THE RESULT IS THE LOSS OF ONE
PHASE OF THE AC BUS. LOSS OF ALL REDUNDANCY WOULD CAUSE LOSS OF
CREW/VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

REFERENCES: 76BG24F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 5898 ABORT: 3/1R

ITEM: SWITCH, TOGGLE 3PDT (INV/AC BUS 1)
FAILURE MODE: INADVERTENT TRANSFER

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) R1A1 PANEL
- 3) MAIN DC DIST ASSY #1
- 4) SWITCH, TOGGLE 3PDT (INV/AC BUS 1)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 32V73A1A1S19
PART NUMBER: ME452-0102-7305

CAUSES: PIECE PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK,
CONTAMINATION

EFFECTS/RATIONALE:

THIS FAILURE COULD DISCONNECT ONE PHASE OF THE AC BUS FROM THE
INVERTER. LOSS OF ALL REDUNDANCY WOULD CAUSE LOSS OF
CREW/VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

REFERENCES: 76BG24F

C - 3

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5899 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE III (AC BUS 1 ON)
FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) PRE-FLIGHT TEST BUS #1
- 3) FLCA-1
- 4) HYBRID DRIVER TYPE III (AC BUS 1 ON)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A16AR9
PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,
PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:
THIS ITEM IS USED FOR GROUND C/O ONLY.

REFERENCES: 76BG23G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5900 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE III (AC BUS 1 ON)
FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) PRE-FLIGHT TEST BUS #1
- 3) FLCA-1
- 4) HYBRID DRIVER TYPE III (AC BUS 1 ON)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A16AR9
PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,
PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:
THIS ITEM IS USED FOR GROUND C/O ONLY.

REFERENCES: 76BG23G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5901 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE III (AC BUS 1 OFF)
FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) PRE-FLIGHT TEST BUS #1
- 3) FLCA-1
- 4) HYBRID DRIVER TYPE III (AC BUS 1 OFF)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A16AR10
PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,
PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:
THIS ITEM IS USED FOR GROUND C/O ONLY.

REFERENCES: 76BG23H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5902 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE III (AC BUS 1 OFF)
FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) PRE-FLIGHT TEST BUS #1
- 3) FLCA-1
- 4) HYBRID DRIVER TYPE III (AC BUS 1 OFF)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A16AR10
PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,
PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS ITEM IS USED FOR GROUND C/O ONLY.

REFERENCES: 76BG23H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5903 ABORT: 3/3

ITEM: FUSE, 3A TO AC BUS 1 CMD
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) PRE-FLIGHT TEST BUS #1
- 3) FLCA-1
- 4) FUSE, 3A TO AC BUS 1 CMD
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A16F
PART NUMBER: ME451-0010-1030

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS CIRCUIT IS USED FOR GROUND C/O ONLY AND IS NOT POWERED
DURING FLIGHT OPERATIONS.

REFERENCES: 76BG23H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5904 ABORT: 3/3

ITEM: FUSE, 3A TO AC BUS 1 CMD
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) PRE-FLIGHT TEST BUS #1
- 3) FLCA-1
- 4) FUSE, 3A TO AC BUS 1 CMD
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A16F
PART NUMBER: ME451-0010-1030

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS CIRCUIT IS USED FOR GROUND C/O ONLY AND IS NOT POWERED
DURING FLIGHT OPERATIONS.

REFERENCES: 76BG23G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 5905 ABORT: 3/1R

ITEM: AC OVER/UNDER VOLT SNSR 1
FAILURE MODE: INADVERTENT OUTPUT

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS #1
- 2) INV DIST & CONT ASSY #1
- 3) AC OVER/UNDER VOLT SNSR 1
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 81V76A35VS1
PART NUMBER: MC431-0129-0011

CAUSES: CONTAMINATION, THERMAL SHOCK, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF ONE PHASE OF A THREE PHASE AC BUS. LOSS OF ALL AC BUSES WOULD LIKELY CAUSE LOSS OF CREW/VEHICLE.

REFERENCES: 76BG

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5906 ABORT: 3/3

ITEM: AC OVER/UNDER VOLT SNSR 1
FAILURE MODE: LOSS OF OUTPUT

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS #1
- 2) INV DIST & CONT ASSY #1
- 3) AC OVER/UNDER VOLT SNSR 1
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A35VS1
PART NUMBER: MC431-0129-0011

CAUSES: CONTAMINATION, THERMAL SHOCK, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE INABILITY TO AUTOMATICALLY DETECT AND INTERRUPT AN OVERLOADED AC INVERTER. MANUAL METHODS OF INVERTER SHUTDOWN ARE AVAILABLE. NO EFFECT TO CREW/MISSION/VEHICLE

REFERENCES: 76BG

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5907 ABORT: 3/3

ITEM: DIODE, BLOCKING 1A (TO 1 A SET)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GROUND C/O (AC BUS 1)
- 2) PRE-FLIGHT TEST BUS #1
- 3) FLCA-1
- 4) INV DIST & CONT ASSY #1
- 5) DIODE, BLOCKING 1A (TO 1 A SET)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A35A1CR1
PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS USED FOR GROUND OPERATIONS ONLY AND IS NON-CRITICAL FOR FLIGHT OPERATIONS.

REFERENCES: 76BG21G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5908 ABORT: 3/3

ITEM: DIODE, BLOCKING 1A (TO 1 A SET)
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GROUND C/O (AC BUS 1)
- 2) PRE-FLIGHT TEST BUS #1
- 3) FLCA-1
- 4) INV DIST & CONT ASSY #1
- 5) DIODE, BLOCKING 1A (TO 1 A SET)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A35A1CR1
PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS USED FOR GROUND OPERATIONS ONLY AND IS NON-CRITICAL FOR FLIGHT OPERATIONS.

REFERENCES: 76BG21G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5909 ABORT: 3/3

ITEM: DIODE, BLOCKING 1A (TO 1 B SET)
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GROUND C/O (AC BUS 1)
- 2) PRE-FLIGHT TEST BUS #1
- 3) FLCA-1
- 4) INV DIST & CONT ASSY #1
- 5) DIODE, BLOCKING 1A (TO 1 B SET)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A35A1CR2
PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS USED FOR GROUND OPERATIONS ONLY AND IS NON-CRITICAL FOR FLIGHT OPERATIONS.

REFERENCES: 76BG21G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5910 ABORT: 3/3

ITEM: DIODE, BLOCKING 1A (TO 1 B SET)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GROUND C/O (AC BUS 1)
- 2) PRE-FLIGHT TEST BUS #1
- 3) FLCA-1
- 4) INV DIST & CONT ASSY #1
- 5) DIODE, BLOCKING 1A (TO 1 B SET)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A35A1CR2

PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS USED FOR GROUND OPERATIONS ONLY AND IS NON-CRITICAL FOR FLIGHT OPERATIONS.

REFERENCES: 76BG21G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5911 ABORT: 3/3

ITEM: DIODE, BLOCKING 1A (TO 1 C SET)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GROUND C/O (AC BUS 1)
- 2) PRE-FLIGHT TEST BUS #1
- 3) FLCA-1
- 4) INV DIST & CONT ASSY #1
- 5) DIODE, BLOCKING 1A (TO 1 C SET)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A35A1CR3
PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS USED FOR GROUND OPERATIONS ONLY AND IS NON-CRITICAL FOR FLIGHT OPERATIONS.

REFERENCES: 76BG21G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5912 ABORT: 3/3

ITEM: DIODE, BLOCKING 1A (TO 1 C SET)
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GROUND C/O (AC BUS 1)
- 2) PRE-FLIGHT TEST BUS #1
- 3) FLCA-1
- 4) INV DIST & CONT ASSY #1
- 5) DIODE, BLOCKING 1A (TO 1 C SET)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A35A1CR3
PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS USED FOR GROUND OPERATIONS ONLY AND IS NON-CRITICAL FOR FLIGHT OPERATIONS.

REFERENCES: 76BG21G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 5913 ABORT: 3/1R

ITEM: DIODE, BLOCKING 1A (TO 1 A RESET)
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GROUND C/O (AC BUS 1)
- 2) PRE-FLIGHT TEST BUS #1
- 3) FLCA-1
- 4) INV DIST & CONT ASSY #1
- 5) DIODE, BLOCKING 1A (TO 1 A RESET)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [3] B [F] C [P]

LOCATION: 81V76A35A1CR4
PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

IF THE AC OVER/UNDER VOLTAGE SENSOR TURNS ONE PHASE OFF, THIS FAILURE WOULD CAUSE LOSS OF THE ENTIRE AC BUS. DURING HIGH WORKLOAD PERIODS THIS MAY CAUSE LOSS OF CREW/VEHICLE BECAUSE OF LOSS OF POWER TO CRITICAL LOADS.

REFERENCES: 76BG21H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5914 ABORT: 3/3

ITEM: DIODE, BLOCKING 1A (TO 1 A RESET)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GROUND C/O (AC BUS 1)
- 2) PRE-FLIGHT TEST BUS #1
- 3) FLCA-1
- 4) INV DIST & CONT ASSY #1
- 5) DIODE, BLOCKING 1A (TO 1 A RESET)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A35A1CR4
PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS USED FOR GROUND OPERATIONS ONLY AND IS NON-CRITICAL FOR FLIGHT OPERATIONS.

REFERENCES: 76BG21H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5915 ABORT: 3/3

ITEM: DIODE, BLOCKING 1A (TO 1 B RESET)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GROUND C/O (AC BUS 1)
- 2) PRE-FLIGHT TEST BUS #1
- 3) FLCA-1
- 4) INV DIST & CONT ASSY #1
- 5) DIODE, BLOCKING 1A (TO 1 B RESET)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A35A1CR5
PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS USED FOR GROUND OPERATIONS ONLY AND IS NON-CRITICAL FOR FLIGHT OPERATIONS.

REFERENCES: 76BG21H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 5916 ABORT: 3/1R

ITEM: DIODE, BLOCKING 1A (TO 1 B RESET)
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GROUND C/O (AC BUS 1)
- 2) PRE-FLIGHT TEST BUS #1
- 3) FLCA-1
- 4) INV DIST & CONT ASSY #1
- 5) DIODE, BLOCKING 1A (TO 1 B RESET)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [3] B [F] C [P]

LOCATION: 81V76A35A1CR5
PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

IF THE AC OVER/UNDER VOLTAGE SENSOR TURNS ONE PHASE OFF, THIS FAILURE WOULD CAUSE LOSS OF THE ENTIRE AC BUS. DURING HIGH WORKLOAD PERIODS THIS MAY CAUSE LOSS OF CREW/VEHICLE BECAUSE OF LOSS OF POWER TO CRITICAL LOADS.

REFERENCES: 76BG21H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 5917 ABORT: 3/1R

ITEM: DIODE, BLOCKING 1A (TO 1 C RESET)
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GROUND C/O (AC BUS 1)
- 2) PRE-FLIGHT TEST BUS #1
- 3) FLCA-1
- 4) INV DIST & CONT ASSY #1
- 5) DIODE, BLOCKING 1A (TO 1 C RESET)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [3] B [F] C [P]

LOCATION: 81V76A35A1CR6
PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

IF THE AC OVER/UNDER VOLTAGE SENSOR TURNS ONE PHASE OFF, THIS FAILURE WOULD CAUSE LOSS OF THE ENTIRE AC BUS. DURING HIGH WORKLOAD PERIODS THIS MAY CAUSE LOSS OF CREW/VEHICLE BECAUSE OF LOSS OF POWER TO CRITICAL LOADS.

REFERENCES: 76BG21H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5918 ABORT: 3/3

ITEM: DIODE, BLOCKING 1A (TO 1 C RESET)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GROUND C/O (AC BUS 1)
- 2) PRE-FLIGHT TEST BUS #1
- 3) FLCA-1
- 4) INV DIST & CONT ASSY #1
- 5) DIODE, BLOCKING 1A (TO 1 C RESET)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A35A1CR6
PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS USED FOR GROUND OPERATIONS ONLY AND IS NON-CRITICAL FOR FLIGHT OPERATIONS.

REFERENCES: 76BG21H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5919 ABORT: 3/3

ITEM: DIODE, BLOCKING 1A (TO 1 C RESET)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST & CONT ASSY #1
- 3) AC OVER/UNDER VOLT SNSR #1
- 4) DIODE, BLOCKING 1A (TO 1 C RESET)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A35A1CR7
PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF CAPABILITY TO RESET THE AFFECTED PHASE RELAY WHEN THE AC OVER/UNDER VOLT SENSOR TRIPS. HOWEVER, THE CREW WILL HEAR ALARMS AND BE ABLE TO RESET THE PHASE RELAY AUTOMATICALLY. SEVERAL MEANS OF MANUAL RESET ARE AVAILABLE INCLUDING REMOVING DC POWER FROM THE AFFECTED INVERTER. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BG15F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5920 ABORT: 3/3

ITEM: DIODE, BLOCKING 1A (TO 1 C RESET)
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST & CONT ASSY #1
- 3) AC OVER/UNDER VOLT SNSR #1
- 4) DIODE, BLOCKING 1A (TO 1 C RESET)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES	
FLIGHT PHASE	HDW/FUNC	ABORT
PRELAUNCH:	3/3	RTLS: 3/3
LIFTOFF:	3/3	TAL: 3/3
ONORBIT:	3/3	AOA: 3/3
DEORBIT:	3/3	ATO: 3/3
LANDING/SAFING:	3/3	

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A35A1CR7
PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD RESULT IN LOSS OF REDUNDANT ISOLATION BETWEEN THE AC OVER/UNDER VOLT SENSOR AND THE AFFECTED PHASE RESET RELAY. THE SENSOR HAS AN INTERNAL ISOLATION DIODE AS A BACK-UP.

REFERENCES: 76BG15F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5921 ABORT: 3/3

ITEM: DIODE, BLOCKING 1A (TO 1 B RESET)
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST & CONT ASSY #1
- 3) AC OVER/UNDER VOLT SNSR #1
- 4) DIODE, BLOCKING 1A (TO 1 B RESET)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A35A1CR8
PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD RESULT IN LOSS OF REDUNDANT ISOLATION BETWEEN THE AC OVER/UNDER VOLT SENSOR AND THE AFFECTED PHASE RESET RELAY. THE SENSOR HAS AN INTERNAL ISOLATION DIODE AS A BACK-UP.

REFERENCES: 76BG15F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5922 ABORT: 3/3

ITEM: DIODE, BLOCKING 1A (TO 1 B RESET)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST & CONT ASSY #1
- 3) AC OVER/UNDER VOLT SNSR #1
- 4) DIODE, BLOCKING 1A (TO 1 B RESET)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A35A1CR8
PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF CAPABILITY TO RESET THE AFFECTED PHASE RELAY WHEN THE AC OVER/UNDER VOLT SENSOR TRIPS. HOWEVER, THE CREW WILL HEAR ALARMS AND BE ABLE TO RESET THE PHASE RELAY AUTOMATICALLY.
SEVERAL MEANS OF MANUAL RESET ARE AVAILABLE INCLUDING REMOVING DC POWER FROM THE AFFECTED INVERTER. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BG15F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5923 ABORT: 3/3

ITEM: DIODE, BLOCKING 1A (TO 1 A RESET)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST & CONT ASSY #1
- 3) AC OVER/UNDER VOLT SNSR #1
- 4) DIODE, BLOCKING 1A (TO 1 A RESET)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A35A1CR9
PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF CAPABILITY TO RESET THE AFFECTED PHASE RELAY WHEN THE AC OVER/UNDER VOLT SENSOR TRIPS. HOWEVER, THE CREW WILL HEAR ALARMS AND BE ABLE TO RESET THE PHASE RELAY AUTOMATICALLY. SEVERAL MEANS OF MANUAL RESET ARE AVAILABLE INCLUDING REMOVING DC POWER FROM THE AFFECTED INVERTER. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BG15F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5924 ABORT: 3/3

ITEM: DIODE, BLOCKING 1A (TO 1 A RESET)
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST & CONT ASSY #1
- 3) AC OVER/UNDER VOLT SNSR #1
- 4) DIODE, BLOCKING 1A (TO 1 A RESET)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A35A1CR9

PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD RESULT IN LOSS OF REDUNDANT ISOLATION BETWEEN THE AC OVER/UNDER VOLT SENSOR AND THE AFFECTED PHASE RESET RELAY. THE SENSOR HAS AN INTERNAL ISOLATION DIODE AS A BACK-UP.

REFERENCES: 76BG15F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5925 ABORT: 3/3

ITEM: RESISTOR, 5.1K 1/4W (TO MDM OF1)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST & CONT ASSY #1
- 3) AC BUS OVER/UNDER VOLTAGE SNSR
- 4) RESISTOR, 5.1K 1/4W (TO MDM OF1)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A35A1R2
PART NUMBER: RLR07C512GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS MEASUREMENT IS NOT CRITICAL TO FLIGHT OPERATION.

REFERENCES: 76BG19C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5926 ABORT: 3/3

ITEM: RESISTOR, 5.1K 1/4W (TO MDM OF1)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST & CONT ASSY #1
- 3) AC BUS OVER/UNDER VOLTAGE SNSR
- 4) RESISTOR, 5.1K 1/4W (TO MDM OF1)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A35A1R1
PART NUMBER: RLR07C512GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS MEASUREMENT IS NOT CRITICAL TO VEHICLE OPERATION.

REFERENCES: 76BG19C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5927 ABORT: 3/3

ITEM: RESISTOR, 2.2K 1/4W
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) 013 PANEL
- 3) R1A1 PANEL
- 4) INV DIST & CONT ASSY #1
- 5) RESISTOR, 2.2K 1/4W TO MDM OF1
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A35A1R6
PART NUMBER: RLR20C222GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A NON-CRITICAL MONITORING CIRCUIT.

REFERENCES: 76BG19C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5928 ABORT: 3/3

ITEM: RESISTOR, 2.2K 1/4W
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) 013 PANEL
- 3) R1A1 PANEL
- 4) INV DIST & CONT ASSY #1
- 5) RESISTOR, 2.2K 1/4W TO MDM OF1
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A35A1R9
PART NUMBER: RLR20C222GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A NON-CRITICAL MONITORING CIRCUIT.

REFERENCES: 76BG19C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5929 ABORT: 3/3

ITEM: RESISTOR, 1.8K 1/4W (TO MDM OF1)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST CONT & ASSY #1
- 3) AC OVER/UNDER VOLT SNSR #1
- 4) RESISTOR, 1.8K 1/4W (TO MDM OF1)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A35A1R7
PART NUMBER: RLR07C182GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS BLEED-OFF RESISTOR IS PART OF A MONITORING FUNCTION AND IS NOT CRITICAL FOR VEHICLE OPERATION.

REFERENCES: 76BG20C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5930 ABORT: 3/3

ITEM: RESISTOR, 1.8K 1/4W (TO MDM OF1)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST CONT & ASSY #1
- 3) AC OVER/UNDER VOLT SNSR #1
- 4) RESISTOR, 1.8K 1/4W (TO MDM OF1)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A35A1R8

PART NUMBER: RLR07C182GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS BLEED-OFF RESISTOR IS PART OF A MONITORING FUNCTION AND IS NOT CRITICAL FOR VEHICLE OPERATION.

REFERENCES: 76BG20C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 5931 ABORT: 3/1R

ITEM: SWITCH, TOGGLE SPDT (AC 1 BUS SNSR)
FAILURE MODE: FAILS TO TRANSFER

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) 013 PANEL
- 3) R1A1 PANEL
- 4) SWITCH, TOGGLE SPDT (AC 1 BUS SNSR)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/3	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 32V73A1A1S22
PART NUMBER: ME452-0102-7103

CAUSES: PIECE PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK,
CONTAMINATION

EFFECTS/RATIONALE:

WORST CASE FAILURE IS LOSS OF CONTROL OF THE AC OVER/UNDER
VOLTAGE SENSOR WHICH COULD PREVENT THE DETECTION AND CORRECTION
OF AN INVERTER/AC BUS ERROR CONDITION. LOSS OF ALL REDUNDANCY
COULD LEAD TO LOSS OF CREW/VEHICLE DUE TO LOSS OF POWER TO LOADS.

REFERENCES: 76BG22B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 5932 ABORT: 3/1R

ITEM: SWITCH, TOGGLE SPDT (AC 1 BUS SNSR)
FAILURE MODE: INADVERTENT TRANSFER

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) 013 PANEL
- 3) R1A1 PANEL
- 4) SWITCH, TOGGLE SPDT (AC 1 BUS SNSR)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/3	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 32V73A1A1S22
PART NUMBER: ME452-0102-7103

CAUSES: PIECE PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK,
CONTAMINATION

EFFECTS/RATIONALE:

WORST CASE FAILURE IS LOSS OF CONTROL OF THE AC OVER/UNDER
VOLTAGE SENSOR WHICH COULD PREVENT THE DETECTION AND CORRECTION
OF AN INVERTER/AC BUS ERROR CONDITION. LOSS OF ALL REDUNDANCY
COULD LEAD TO LOSS OF CREW/VEHICLE DUE TO LOSS OF POWER TO LOADS.

REFERENCES: 76BG22B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 5933 ABORT: 3/1R

ITEM: CIRCUIT BREAKER, 3A TO AC1 BUS SENSOR
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) 013 PANEL
- 3) CIRCUIT BREAKER, 3A TO AC1 BUS SENSOR
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 33V73A13CB3
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

WORST CASE FAILURE OCCURS WHEN THE SENSOR MONITOR/AUTO SWITCH
FAILS ALSO. THE RESULT IS LOSS OF CAPABILITY TO DETECT AND
CORRECT AN INVERTER/AC BUS ERROR CONDITION. LOSS OF ALL AC POWER
WOULD LIKELY CAUSE LOSS OF CREW/VEHICLE DUE TO LACK OF POWER TO
CRITICAL LOADS.

REFERENCES: 76BF24B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 5934 ABORT: 3/1R

ITEM: CIRCUIT BREAKER, 3A TO AC1 BUS SENSOR
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) 013 PANEL
- 3) CIRCUIT BREAKER, 3A TO AC1 BUS SENSOR
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 33V73A13CB3
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

WORST CASE FAILURE OCCURS WHEN THE SENSOR MONITOR/AUTO SWITCH
FAILS ALSO. THE RESULT IS LOSS OF CAPABILITY TO DETECT AND
CORRECT AN INVERTER/AC BUS ERROR CONDITION. LOSS OF ALL AC POWER
WOULD LIKELY CAUSE LOSS OF CREW/VEHICLE DUE TO LACK OF POWER TO
CRITICAL LOADS.

REFERENCES: 76BF24B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 5935 ABORT: 3/1R

ITEM: RELAY, LATCHING TO AC BUS 1A
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST & CONT ASSY #1
- 3) RELAY, LATCHING TO AC BUS 1A
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 81V76A35K1
PART NUMBER: MC451-0122-0001(?)

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF ONE PHASE OF THE THREE PHASE AC BUSS. REDUNDANT BUSES WOULD PROVIDE POWER TO CRITICAL LOADS. LOSS OF ALL REDUNDANCY COULD CAUSE LOSS OF CREW/VEHICLE DUE TO LOSS OF POWER TO CRITICAL LOADS.

REFERENCES: 76BG11

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5936 ABORT: 3/3

ITEM: RELAY, LATCHING TO AC BUS 1A
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST & CONT ASSY #1
- 3) RELAY, LATCHING TO AC BUS 1A
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		
	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A35K1
PART NUMBER: MC451-0122-0001(?)

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE INABILITY TO DISCONNECT THE PHASE
FROM THE AC BUS. NO EFFECT ON CREW/VEHICLE/MISSION AS THIS RELAY
IS NORMALLY CLOSED DURING FLIGHT OPERATIONS.

REFERENCES: 76BG11

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5937 ABORT: 3/3

ITEM: RELAY, LATCHING TO AC BUS 1B
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST & CONT ASSY #1
- 3) RELAY, LATCHING TO AC BUS 1B
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A35K2
PART NUMBER: MC451-0122-0001(?)

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE INABILITY TO DISCONNECT THE PHASE
FROM THE AC BUS. NO EFFECT ON CREW/VEHICLE/MISSION AS THIS RELAY
IS NORMALLY CLOSED DURING FLIGHT OPERATIONS.

REFERENCES: 76BG11

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 5938 ABORT: 3/1R

ITEM: RELAY, LATCHING TO AC BUS 1B
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST & CONT ASSY #1
- 3) RELAY, LATCHING TO AC BUS 1B
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 81V76A35K2
PART NUMBER: MC451-0122-0001(?)

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF ONE PHASE OF THE THREE PHASE AC BUS. REDUNDANT BUSES WOULD PROVIDE POWER TO CRITICAL LOADS. LOSS OF ALL REDUNDANCY COULD CAUSE LOSS OF CREW/VEHICLE DUE TO LOSS OF POWER TO CRITICAL LOADS.

REFERENCES: 76BG11

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 5939 ABORT: 3/1R

ITEM: RELAY, LATCHING TO AC BUS 1C
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST & CONT ASSY #1
- 3) RELAY, LATCHING TO AC BUS 1C
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 81V76A35K3
PART NUMBER: MC451-0122-0001(?)

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF ONE PHASE OF THE THREE PHASE
AC BUS. REDUNDANT BUSES WOULD PROVIDE POWER TO CRITICAL LOADS.
LOSS OF ALL REDUNDANCY COULD CAUSE LOSS OF CREW/VEHICLE DUE TO
LOSS OF POWER TO CRITICAL LOADS.

REFERENCES: 76BG11

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5940 ABORT: 3/3

ITEM: RELAY, LATCHING TO AC BUS 1C
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST & CONT ASSY #1
- 3) RELAY, LATCHING TO AC BUS 1C
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A35K3
PART NUMBER: MC451-0122-0001(?)

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE INABILITY TO DISCONNECT THE PHASE
FROM THE AC BUS. NO EFFECT ON CREW/VEHICLE/MISSION AS THIS RELAY
IS NORMALLY CLOSED DURING FLIGHT OPERATIONS.

REFERENCES: 76BG11

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 5941 ABORT: 3/1R

ITEM: FUSE, 3A TO AC BUS 1 A
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST CONT ASSY #1
- 3) AC O/V VOLT SNSR 1
- 4) FUSE, 3A TO AC BUS 1 A
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 81V76A35F1
PART NUMBER: ME451-0009-1003

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

IF THE AC BUS SENSOR SWITCH IS IN "AUTO", THIS FAILURE WOULD CAUSE THE LOSS OF ONE PHASE OF THE THREE PHASE AC BUS. LOSS OF ALL REDUNDANCY COULD CAUSE LOSS OF CREW/VEHICLE DUE TO LOSS OF POWER TO CRITICAL LOADS.

REFERENCES: 76BG9E

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 5942 ABORT: 3/1R

ITEM: FUSE, 3A TO AC BUS 1 B
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST CONT ASSY #1
- 3) AC O/V VOLT SNSR 1
- 4) FUSE, 3A TO AC BUS 1 B
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 81V76A35F2
PART NUMBER: ME451-0009-1003

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

IF THE AC BUS SENSOR SWITCH IS IN "AUTO", THIS FAILURE WOULD CAUSE THE LOSS OF ONE PHASE OF THE THREE PHASE AC BUS. LOSS OF ALL REDUNDANCY COULD CAUSE LOSS OF CREW/VEHICLE DUE TO LOSS OF POWER TO CRITICAL LOADS.

REFERENCES: 76BG9D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 5943 ABORT: 3/1R

ITEM: FUSE, 3A TO AC BUS 1 C
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST CONT ASSY #1
- 3) AC O/V VOLT SNSR 1
- 4) FUSE, 3A TO AC BUS 1 C
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 81V76A35F3
PART NUMBER: ME451-0009-1003

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

IF THE AC BUS SENSOR SWITCH IS IN "AUTO", THIS FAILURE WOULD CAUSE THE LOSS OF ONE PHASE OF THE THREE PHASE AC BUS. LOSS OF ALL REDUNDANCY COULD CAUSE LOSS OF CREW/VEHICLE DUE TO LOSS OF POWER TO CRITICAL LOADS.

REFERENCES: 76BG9B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5944 ABORT: 3/3

ITEM: FUSE, 3A TO AC VOLTMETER
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST CONT ASSY #1
- 3) FUSE, 3A TO AC VOLTMETER
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A35F4
PART NUMBER: MC451-0009-1003

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FUSE CONNECTS TO A NON-CRITICAL MEASUREMENT CIRCUIT.
ALTERNATE MEASUREMENTS ARE AVAILABLE TO THE CREW. NO EFFECT ON
CREW/MISSION/VEHICLE.

REFERENCES: 76BG9E

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5945 ABORT: 3/3

ITEM: FUSE, 3A TO AC VOLTMETER
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST CONT ASSY #1
- 3) FUSE, 3A TO AC VOLTMETER
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC	
PRELAUNCH:	3/3	RTLS:	3/3	
LIFTOFF:	3/3	TAL:	3/3	
ONORBIT:	3/3	AOA:	3/3	
DEORBIT:	3/3	ATO:	3/3	
LANDING/SAFING:	3/3			

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A35F5
PART NUMBER: MC451-0009-1003

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FUSE CONNECTS TO A NON-CRITICAL MEASUREMENT CIRCUIT.
ALTERNATE MEASUREMENTS ARE AVAILABLE TO THE CREW. NO EFFECT ON
CREW/MISSION/VEHICLE.

REFERENCES: 76BG9C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5946 ABORT: 3/3

ITEM: FUSE, 3A TO AC VOLTMETER
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST CONT ASSY #1
- 3) FUSE, 3A TO AC VOLTMETER
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A35F6
PART NUMBER: MC451-0009-1003

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FUSE CONNECTS TO A NON-CRITICAL MEASUREMENT CIRCUIT.
ALTERNATE MEASUREMENTS ARE AVAILABLE TO THE CREW. NO EFFECT ON
CREW/MISSION/VEHICLE.

REFERENCES: 76BG9B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5947 ABORT: 3/3

ITEM: RESISTOR, 5.1K 1/4W (TO MDM OF1)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST & CONT ASSY #1
- 3) ESS BUS 1BC
- 4) RESISTOR, 5.1K 1/4W (TO MDM OF1)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A35A1R3
PART NUMBER: RLR07C512GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:
THIS MEASUREMENT IS NOT CRITICAL TO VEHICLE OPERATION.

REFERENCES: 76BG12H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5948 ABORT: 3/3

ITEM: RESISTOR, 5.1K 1/4W (TO MDM OF1)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST & CONT ASSY #1
- 3) ESS BUS 1BC
- 4) RESISTOR, 5.1K 1/4W (TO MDM OF1)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		
	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A35A1R4
PART NUMBER: RLR07C512GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS MEASUREMENT IS NOT CRITICAL TO VEHICLE OPERATION.

REFERENCES: 76BG12G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5949 ABORT: 3/3

ITEM: RESISTOR, 5.1K 1/4W (TO MDM OF1)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST & CONT ASSY #1
- 3) ESS BUS 1BC
- 4) RESISTOR, 5.1K 1/4W (TO MDM OF1)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A35A1R5
PART NUMBER: RLR07C512GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:
THIS MEASUREMENT IS NOT CRITICAL TO VEHICLE OPERATION.

REFERENCES: 76BG12G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5950 ABORT: 3/3

ITEM: RESISTOR, 4.3K 1/8W (AC BUS 1 A VOLTAGE)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE PWR MONITOR
- 2) INV DIST & CONT ASSY #1
- 3) RESISTOR, 4.3K 1/8W (AC BUS 1 A VOLTAGE)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A35A1R16
PART NUMBER: RLR05C432GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A GSE MEASUREMENT THAT IS NOT CRITICAL DURING FLIGHT.

REFERENCES: 76BG9A

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5951 ABORT: 3/3

ITEM: RESISTOR, 4.3K 1/8W (AC BUS 1 B VOLTAGE)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE PWR MONITOR
- 2) INV DIST & CONT ASSY #1
- 3) RESISTOR, 4.3K 1/8W (AC BUS 1 B VOLTAGE)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A35A1R17
PART NUMBER: RLR05C432GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A GSE MEASUREMENT THAT IS NOT CRITICAL DURING FLIGHT.

REFERENCES: 76BG9A

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5952 ABORT: 3/3

ITEM: RESISTOR, 4.3K 1/8W (AC BUS 1 C VOLTAGE)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE PWR MONITOR
- 2) INV DIST & CONT ASSY #1
- 3) RESISTOR, 4.3K 1/8W (AC BUS 1 C VOLTAGE)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A35A1R18
PART NUMBER: RLR05C432GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A GSE MEASUREMENT THAT IS NOT CRITICAL DURING FLIGHT.

REFERENCES: 76BG9A

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5953 ABORT: 3/3

ITEM: RESISTOR, 150K 1/2W (AC BUS 1 A VOLTAGE)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE PWR MONITOR
- 2) INV DIST & CONT ASSY #1
- 3) RESISTOR, 150K 1/2W (AC BUS 1 A VOLTAGE)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A35A1R13
PART NUMBER: RLR20C154GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A GSE MEASUREMENT THAT IS NOT CRITICAL DURING FLIGHT.

REFERENCES: 76BG10E

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5954 ABORT: 3/3

ITEM: RESISTOR, 150K 1/2W (AC BUS 1 B VOLTAGE)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE PWR MONITOR
- 2) INV DIST & CONT ASSY #1
- 3) RESISTOR, 150K 1/2W (AC BUS 1 B VOLTAGE)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A35A1R14

PART NUMBER: RLR20C154GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A GSE MEASUREMENT THAT IS NOT CRITICAL DURING FLIGHT.

REFERENCES: 76BG10D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5955 ABORT: 3/3

ITEM: RESISTOR, 150K 1/2W (AC BUS 1 C VOLTAGE)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE PWR MONITOR
- 2) INV DIST & CONT ASSY #1
- 3) RESISTOR, 150K 1/2W (AC BUS 1 C VOLTAGE)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A35A1R15
PART NUMBER: RLR20C154GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A GSE MEASUREMENT THAT IS NOT CRITICAL DURING FLIGHT.

REFERENCES: 76BG10B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5956 ABORT: 3/3

ITEM: RESISTOR, 100K (AC BUS 1 A CURRENT)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE PWR MONITOR
- 2) INV DIST & CONT ASSY #1
- 3) RESISTOR, 100K (AC BUS 1 A CURRENT)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A35A1R10
PART NUMBER: RLR05C1003GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A NON-CRITICAL GSE MEASUREMENT THAT IS NOT USED DURING FLIGHT.

REFERENCES: 76BG13E

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5957 ABORT: 3/3

ITEM: RESISTOR, 100K (AC BUS 1 B CURRENT)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE PWR MONITOR
- 2) INV DIST & CONT ASSY #1
- 3) RESISTOR, 100K (AC BUS 1 B CURRENT)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC	
PRELAUNCH:	3/3	RTLS:	3/3	
LIFTOFF:	3/3	TAL:	3/3	
ONORBIT:	3/3	AOA:	3/3	
DEORBIT:	3/3	ATO:	3/3	
LANDING/SAFING:	3/3			

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A35A1R11
PART NUMBER: RLR05C1003GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A NON-CRITICAL GSE MEASUREMENT THAT IS NOT USED DURING FLIGHT.

REFERENCES: 76BG13D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5958 ABORT: 3/3

ITEM: RESISTOR, 100K (AC BUS 1 C CURRENT)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE PWR MONITOR
- 2) INV DIST & CONT ASSY #1
- 3) RESISTOR, 100K (AC BUS 1 C CURRENT)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		
	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A35A1R12
PART NUMBER: RLR05C1003GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A NON-CRITICAL GSE MEASUREMENT THAT IS NOT USED DURING FLIGHT.

REFERENCES: 76BG13B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5959 ABORT: 3/3

ITEM: AC VOLTMETER
FAILURE MODE: FAILS OPEN OR SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) F9A2 PANEL
- 2) AC VOLTMETER
- 3)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 34V73A9A2M1
PART NUMBER: MC432-0237-0002

CAUSES: CONTAMINATION, PIECE-PART FAILURE, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

NO EFFECT AS THIS METER PROVIDES NON-CRITICAL MEASUREMENTS.
ALTERNATE MEASUREMENT VISABILITY IS AVAILABLE.

REFERENCES: 76BG7H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5960 ABORT: 3/3

ITEM: SWITCH, TOGGLE 3PDT (AC BUS 1 UTIL PWR)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV & DIST CONT ASSY #1
- 3) L4 PANEL
- 4) F1 PANEL
- 5) M052J PANEL
- 6) SWITCH, TOGGLE 3PDT (AC BUS 1 UTIL PWR)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 80V73A124S2
PART NUMBER: ME452-0102-7303

CAUSES: PIECE-PART STRUCTURAL FAILURE, VIBRATION, CONTAMINATION,
MECH SHOCK

EFFECTS/RATIONALE:

THIS SWITCH CONTROLS A NON-CRITICAL AC UTILITY POWER OUTLET. NO
EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BH15B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5961 ABORT: 3/3

ITEM: SWITCH, TOGGLE 3PDT (AC BUS 1 UTIL PWR)
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV & DIST CONT ASSY #1
- 3) L4 PANEL
- 4) F1 PANEL
- 5) M052J PANEL
- 6) SWITCH, TOGGLE 3PDT (AC BUS 1 UTIL PWR)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 80V73A124S2
PART NUMBER: ME452-0102-7303

CAUSES: PIECE-PART STRUCTURAL FAILURE, VIBRATION, CONTAMINATION,
MECH SHOCK

EFFECTS/RATIONALE:

THIS SWITCH CONTROLS A NON-CRITICAL AC UTILITY POWER OUTLET. NO
EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BH15B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5962 ABORT: 3/3

ITEM: SWITCH, TOGGLE 3PDT (AC BUS 1 UTIL PWR)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV & DIST CONT ASSY #1
- 3) L4 PANEL
- 4) F1 PANEL
- 5) SWITCH, TOGGLE 3PDT (AC BUS 1 UTIL PWR)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 34V73A1S2
PART NUMBER: ME452-0102-7303

CAUSES: PIECE-PART STRUCTURAL FAILURE, VIBRATION, CONTAMINATION,
MECH SHOCK

EFFECTS/RATIONALE:

THIS SWITCH CONTROLS A NON-CRITICAL AC UTILITY POWER OUTLET. NO
EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BH15D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5963 ABORT: 3/3

ITEM: SWITCH, TOGGLE 3PDT (AC BUS 1 UTIL PWR)
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV & DIST CONT ASSY #1
- 3) L4 PANEL
- 4) F1 PANEL
- 5) SWITCH, TOGGLE 3PDT (AC BUS 1 UTIL PWR)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 34V73A1S2
PART NUMBER: ME452-0102-7303

CAUSES: PIECE-PART STRUCTURAL FAILURE, VIBRATION, CONTAMINATION,
MECH SHOCK

EFFECTS/RATIONALE:

THIS SWITCH CONTROLS A NON-CRITICAL AC UTILITY POWER OUTLET. NO
EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BH15D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5964 ABORT: 3/3

ITEM: CIRCUIT BREAKER, 3A 3-P
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS #1
- 2) INV DIST & CONT ASSY #1
- 3) L4 PANEL
- 4) CIRCUIT BREAKER, 3P 3A TO AC UTIL POWER
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 31V73A4CB28
PART NUMBER: MC452-0032-3030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS ITEM PROVIDES POWER AND CIRCUIT PROTECTION TO AN AC UTILITY
OUTLET. THIS FAILURE WOULD HAVE NO EFFECT ON
CREW/MISSION/VEHICLE.

REFERENCES: 76BH15G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5965 ABORT: 3/3

ITEM: CIRCUIT BREAKER, 3A 3-P
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS #1
- 2) INV DIST & CONT ASSY #1
- 3) L4 PANEL
- 4) CIRCUIT BREAKER, 3P 3A TO AC UTIL POWER
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 31V73A4CB28
PART NUMBER: MC452-0032-3030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS ITEM PROVIDES POWER AND CIRCUIT PROTECTION TO AN AC UTILITY
OUTLET. THIS FAILURE WOULD HAVE NO EFFECT ON
CREW/MISSION/VEHICLE.

REFERENCES: 76BH15G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 2/1R
MDAC ID: 5966 ABORT: 2/1R

ITEM: CIRCUIT BREAKER TO FMCA-1
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST & CONT ASSY #1
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER TO FMCA-1
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		
	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	2/1R
LIFTOFF:	3/3	TAL:	2/1R
ONORBIT:	2/1R	AOA:	2/1R
DEORBIT:	2/1R	ATO:	2/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 85V73A129CB1
PART NUMBER: MC454-0032-3030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE OF TWO REDUNDANT AC POWER SOURCES TO DOOR MOTORS. SECOND FAILURE WOULD LOSE ALL POWER TO THESE MOTORS. LOSS OF CREW/VEHICLE IS LIKELY DUE TO STRUCTURAL DAMAGE ON ENTRY, IF DOORS CANNOT BE OPERATED.

REFERENCES: 76BJ22D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5967 ABORT: 3/3

ITEM: CIRCUIT BREAKER TO FMCA-1
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST & CONT ASSY #1
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER TO FMCA-1
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 85V73A129CB1
PART NUMBER: MC454-0032-3030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:
THIS FAILURE HAS NO EFFECT AS THIS IS THE NORMAL FLIGHT
CONFIGURATION.

REFERENCES: 76BJ22D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 2/1R
MDAC ID: 5968 ABORT: 2/1R

ITEM: CIRCUIT BREAKER TO MMCA-1
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST & CONT ASSY #1
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER TO MMCA-1
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	2/1R
LIFTOFF:	3/3	TAL:	2/1R
ONORBIT:	2/1R	AOA:	2/1R
DEORBIT:	2/1R	ATO:	2/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 85V73A129CB2
PART NUMBER: MC454-0032-3030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE OF TWO REDUNDANT AC POWER SOURCES TO DOOR MOTORS. SECOND FAILURE WOULD LOSE ALL POWER TO THESE MOTORS. LOSS OF CREW/VEHICLE IS LIKELY DUE TO STRUCTURAL DAMAGE ON ENTRY, IF DOORS CANNOT BE OPERATED. AFTER SECOND FAILURE, CREW EVA REQUIRE TO CLOSE AND LATCH PAYLOAD BAY DOORS AND LATCHES.

REFERENCES: 76BJ22G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5969 ABORT: 3/3

ITEM: CIRCUIT BREAKER TO MMCA-1
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST & CONT ASSY #1
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER TO MMCA-1
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 85V73A129CB2
PART NUMBER: MC454-0032-3030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:
THIS FAILURE HAS NO EFFECT AS THIS IS THE NORMAL FLIGHT
CONFIGURATION.

REFERENCES: 76BJ22G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 2/1R
MDAC ID: 5970 ABORT: 2/1R

ITEM: CIRCUIT BREAKER TO MMCA-3
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST & CONT ASSY #1
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER TO MMCA-3
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	HDW/FUNC	CRITICALITIES	ABORT	HDW/FUNC
PRELAUNCH:	3/3		RTLS:	2/1R
LIFTOFF:	3/3		TAL:	2/1R
ONORBIT:	2/1R		AOA:	2/1R
DEORBIT:	2/1R		ATO:	2/1R
LANDING/SAFING:	3/3			

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 85V73A129CB3
PART NUMBER: MC454-0032-3030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE OF TWO REDUNDANT AC POWER SOURCES TO DOOR MOTORS. SECOND FAILURE WOULD LOSE ALL POWER TO THESE MOTORS. LOSS OF CREW/VEHICLE IS LIKELY DUE TO STRUCTURAL DAMAGE ON ENTRY, IF DOORS CANNOT BE OPERATED. AFTER SECOND FAILURE, CREW EVA REQUIRE TO CLOSE AND LATCH PAYLOAD BAY DOORS AND LATCHES.

REFERENCES: 76BJ22F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5971 ABORT: 3/3

ITEM: CIRCUIT BREAKER TO MMCA-3
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST & CONT ASSY #1
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER TO MMCA-3
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 85V73A129CB3
PART NUMBER: MC454-0032-3030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE HAS NO EFFECT AS THIS IS THE NORMAL FLIGHT
CONFIGURATION.

REFERENCES: 76BJ22F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 2/1R
MDAC ID: 5972 ABORT: 2/1R

ITEM: CIRCUIT BREAKER TO AMCA-1
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST & CONT ASSY #1
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER TO AMCA-1
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	2/1R
LIFTOFF:	3/3	TAL:	2/1R
ONORBIT:	2/1R	AOA:	2/1R
DEORBIT:	2/1R	ATO:	2/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 85V73A129CB4
PART NUMBER: MC454-0032-3030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE OF TWO REDUNDANT AC POWER SOURCES TO DOOR MOTORS. SECOND FAILURE WOULD LOSE ALL POWER TO THESE MOTORS. LOSS OF CREW/VEHICLE IS LIKELY DUE TO STRUCTURAL DAMAGE ON ENTRY, IF DOORS CANNOT BE OPERATED.

REFERENCES: 76BJ22H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5973 ABORT: 3/3

ITEM: CIRCUIT BREAKER TO AMCA-1
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST & CONT ASSY #1
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER TO AMCA-1
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 85V73A129CB4
PART NUMBER: MC454-0032-3030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:
THIS FAILURE HAS NO EFFECT AS THIS IS THE NORMAL FLIGHT
CONFIGURATION.

REFERENCES: 76BJ22H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 5974 ABORT: 3/1R

ITEM: CIRCUIT BREAKER AC 1A TO RCS/OMS-1
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST & CONT ASSY #1
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER AC 1A TO RCS/OMS-1
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 85V73A129CB38
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE PHASE OF THE THREE PHASE AC
RCS/OMS BUS. LOSS OF ALL REDUNDANCY WOULD CAUSE LOSS OF
CREW/VEHICLE DUE TO INABILITY TO CONTROL ISOLATION VALVES AND
MANIFOLDS DURING A CROSSFEED SITUATION WHERE THE PROP TANKS ARE
ISOLATED.

REFERENCES: 76BJ23C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5975 ABORT: 3/3

ITEM: CIRCUIT BREAKER AC 1A TO RCS/OMS-1
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST & CONT ASSY #1
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER AC 1A TO RCS/OMS-1
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 85V73A129CB38
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:
THIS FAILURE WOULD HAVE NO EFFECT AS THIS IS NORMAL FLIGHT
CONFIGURATION.

REFERENCES: 76BJ23C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 5976 ABORT: 3/1R

ITEM: CIRCUIT BREAKER AC 1B TO RCS/OMS-1
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST & CONT ASSY #1
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER AC 1B TO RCS/OMS-1
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 85V73A129CB39
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE PHASE OF THE THREE PHASE AC
RCS/OMS BUS. LOSS OF ALL REDUNDANCY WOULD CAUSE LOSS OF
CREW/VEHICLE DUE TO INABILITY TO CONTROL ISOLATION VALVES AND
MANIFOLDS DURING A CROSSFEED SITUATION WHERE THE PROP TANKS ARE
ISOLATED.

REFERENCES: 76BJ23B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5977 ABORT: 3/3

ITEM: CIRCUIT BREAKER AC 1B TO RCS/OMS-1
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST & CONT ASSY #1
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER AC 1B TO RCS/OMS-1
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 85V73A129CB39
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:
THIS FAILURE WOULD HAVE NO EFFECT AS THIS IS NORMAL FLIGHT
CONFIGURATION.

REFERENCES: 76BJ23B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 5978 ABORT: 3/1R

ITEM: CIRCUIT BREAKER AC 1C TO RCS/OMS-1
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST & CONT ASSY #1
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER AC 1C TO RCS/OMS-1
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 85V73A129CB40
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE PHASE OF THE THREE PHASE AC
RCS/OMS BUS. LOSS OF ALL REDUNDANCY WOULD CAUSE LOSS OF
CREW/VEHICLE DUE TO INABILITY TO CONTROL ISOLATION VALVES AND
MANIFOLDS DURING A CROSSFEED SITUATION WHERE THE PROP TANKS ARE
ISOLATED.

REFERENCES: 76BJ23B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5979 ABORT: 3/3

ITEM: CIRCUIT BREAKER AC 1C TO RCS/OMS-1
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST & CONT ASSY #1
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER AC 1C TO RCS/OMS-1
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	HDW/FUNC	CRITICALITIES	ABORT	HDW/FUNC
PRELAUNCH:	3/3		RTLS:	3/3
LIFTOFF:	3/3		TAL:	3/3
ONORBIT:	3/3		AOA:	3/3
DEORBIT:	3/3		ATO:	3/3
LANDING/SAFING:	3/3			

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 85V73A129CB40
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:
THIS FAILURE WOULD HAVE NO EFFECT AS THIS IS NORMAL FLIGHT
CONFIGURATION.

REFERENCES: 76BJ23B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 2/1R
MDAC ID: 5980 ABORT: 2/1R

ITEM: RELAY TO PLBD AC1
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST & CONT ASSY #1
- 3) MA73C PANEL
- 4) MMCA-3
- 5) RELAY TO PLBD AC1
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	2/1R	AOA:	3/3
DEORBIT:	3/3	ATO:	2/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 40V76A119K20
PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT AC POWER TO THE
PAYLOAD BAY DOOR MOTORS. SECOND FAILURE IN THE REDUNDANT POWER
SOURCE WOULD PREVENT CLOSING THE PAYLOAD BAY DOORS PRIOR TO
ENTRY.

REFERENCES: 76BJ14E

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 5981 ABORT: 3/1R

ITEM: RELAY TO PLBD AC1
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST & CONT ASSY #1
- 3) MA73C PANEL
- 4) MMCA-3
- 5) RELAY TO PLBD AC1
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	HDW/FUNC	CRITICALITIES	HDW/FUNC
PRELAUNCH:	3/3	ABORT	
LIFTOFF:	3/1R	RTLS:	3/1R
ONORBIT:	3/1R	TAL:	3/1R
DEORBIT:	3/1R	AOA:	3/1R
LANDING/SAFING:	3/3	ATO:	3/1R

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 40V76A119K20
PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANCY TO PREVENT PREMATURE POWER TO THE P/L BAY DOORS. IF POWER WERE APPLIED PREMATURELY (MULTIPLE FAILURES), THE CREW/VEHICLE COULD BE LOST DUE TO PREMATURE OPENING OR CLOSING THE P/L BAY DOORS.

REFERENCES: 76BJ14E

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 2/1R
MDAC ID: 5982 ABORT: 2/1R

ITEM: RELAY TO PLBD AC1
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST & CONT ASSY #1
- 3) MA73C PANEL
- 4) MMCA-3
- 5) RELAY TO PLBD AC1
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	2/1R	AOA:	3/3
DEORBIT:	3/3	ATO:	2/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 40V76A119K22
PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT AC POWER TO THE
PAYLOAD BAY DOOR MOTORS. SECOND FAILURE IN THE REDUNDANT POWER
SOURCE WOULD PREVENT CLOSING THE PAYLOAD BAY DOORS PRIOR TO
ENTRY.

REFERENCES: 76BJ14E

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 5983 ABORT: 3/1R

ITEM: RELAY TO PLBD AC1
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER

SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST & CONT ASSY #1
- 3) MA73C PANEL
- 4) MMCA-3
- 5) RELAY TO PLBD AC1
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 40V76A119K22
PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANCY TO PREVENT PREMATURE POWER TO THE P/L BAY DOORS. IF POWER WERE APPLIED PREMATURELY (MULTIPLE FAILURES), THE CREW/VEHICLE COULD BE LOST DUE TO PREMATURE OPENING OR CLOSING THE P/L BAY DOORS.

REFERENCES: 76BJ14E

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 2/1R
MDAC ID: 5984 ABORT: 2/1R

ITEM: RELAY TO PLBD AC1
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST & CONT ASSY #1
- 3) MA73C PANEL
- 4) MMCA-1
- 5) RELAY TO PLBD AC1
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	2/1R	AOA:	3/3
DEORBIT:	3/3	ATO:	2/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 40V76A117K66
PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT AC POWER TO THE
PAYLOAD BAY DOOR MOTORS. SECOND FAILURE IN THE REDUNDANT POWER
SOURCE WOULD PREVENT CLOSING THE PAYLOAD BAY DOORS PRIOR TO
ENTRY.

REFERENCES: 76BJ7D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 5985 ABORT: 3/1R

ITEM: RELAY TO PLBD AC1
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST & CONT ASSY #1
- 3) MA73C PANEL
- 4) MMCA-1
- 5) RELAY TO PLBD AC1
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 40V76A117K66
PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANCY TO PREVENT PREMATURE POWER TO THE P/L BAY DOORS. IF POWER WERE APPLIED PREMATURELY (MULTIPLE FAILURES), THE CREW/VEHICLE COULD BE LOST DUE TO PREMATURE OPENING OR CLOSING THE P/L BAY DOORS.

REFERENCES: 76BJ7D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 2/1R
MDAC ID: 5986 ABORT: 2/1R

ITEM: RELAY TO PLBD AC1
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST & CONT ASSY #1
- 3) MA73C PANEL
- 4) MMCA-1
- 5) RELAY TO PLBD AC1
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	2/1R	AOA:	3/3
DEORBIT:	3/3	ATO:	2/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 40V76A117K78
PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT AC POWER TO THE
PAYLOAD BAY DOOR MOTORS. SECOND FAILURE IN THE REDUNDANT POWER
SOURCE WOULD PREVENT CLOSING THE PAYLOAD BAY DOORS PRIOR TO
ENTRY.

REFERENCES: 76BJ7D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 5987 ABORT: 3/1R

ITEM: RELAY TO PLBD AC1
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST & CONT ASSY #1
- 3) MA73C PANEL
- 4) MMCA-1
- 5) RELAY TO PLBD AC1
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 40V76A117K78
PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANCY TO PREVENT PREMATURE POWER TO THE P/L BAY DOORS. IF POWER WERE APPLIED PREMATURELY (MULTIPLE FAILURES), THE CREW/VEHICLE COULD BE LOST DUE TO PREMATURE OPENING OR CLOSING THE P/L BAY DOORS.

REFERENCES: 76BJ7D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 2/1R
MDAC ID: 5988 ABORT: 2/1R

ITEM: RELAY, 4P TO PLBM-AC1
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST & CONT ASSY #1
- 3) MA73C PANEL
- 4) MMCA-1
- 5) RELAY, 4P TO PLBM-AC1
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	2/1R	AOA:	3/3
DEORBIT:	2/1R	ATO:	2/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 40V76A117K80
PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE POWER SOURCE TO DUAL
REDUNDANT POWERED FUNCTIONS. SECOND FAILURE COULD MAKE THESE
FUNCTIONS (PAYLOAD BAY DOOR LATCHES) INOPERATIVE. THIS IS VERY
LIKELY TO CAUSE LOSS OF CREW/VEHICLE ON ENTRY.

REFERENCES: 76BJ6D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 5989 ABORT: 3/1R

ITEM: RELAY, 4P TO PLBM-AC1
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER

SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST & CONT ASSY #1
- 3) MA73C PANEL
- 4) MMCA-1
- 5) RELAY, 4P TO PLBM-AC1
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	HDW/FUNC	CRITICALITIES	ABORT	HDW/FUNC
PRELAUNCH:	3/3		RTLS:	3/1R
LIFTOFF:	3/1R		TAL:	3/1R
ONORBIT:	3/1R		AOA:	3/1R
DEORBIT:	3/1R		ATO:	3/1R
LANDING/SAFING:	3/3			

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 40V76A117K80
PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD REMOVE REDUNDANT PROTECTION FROM
INADVERTENTLY POWERING A PAYLOAD BUS. SECOND FAILURE IN THE SAME
CIRCUIT WOULD SUPPLY POWER TO CERTAIN PAYLOAD LOADS. THIRD
FAILURE IN THE LOAD MAY PREMATURELY CAUSE AN ACTION THAT COULD
CAUSE LOSS OF CREW/VEHICLE.

REFERENCES: 76BJ6D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 2/1R
MDAC ID: 5990 ABORT: 2/1R

ITEM: RELAY, 4P TO PLBM-AC1
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST & CONT ASSY #1
- 3) MA73C PANEL
- 4) MMCA-1
- 5) RELAY, 4P TO PLBM-AC1
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	2/1R	AOA:	3/3
DEORBIT:	2/1R	ATO:	2/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 40V76A117K84
PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE POWER SOURCE TO DUAL
REDUNDANT POWERED FUNCTIONS. SECOND FAILURE COULD MAKE THESE
FUNCTIONS (PAYLOAD BAY DOOR LATCHES) INOPERATIVE. THIS IS VERY
LIKELY TO CAUSE LOSS OF CREW/VEHICLE ON ENTRY.

REFERENCES: 76BJ6D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 5991 ABORT: 3/1R

ITEM: RELAY, 4P TO PLBM-AC1
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST & CONT ASSY #1
- 3) MA73C PANEL
- 4) MMCA-1
- 5) RELAY, 4P TO PLBM-AC1
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	HDW/FUNC	CRITICALITIES	HDW/FUNC
PRELAUNCH:	3/3	ABORT	
LIFTOFF:	3/1R	RTLS:	3/1R
ONORBIT:	3/1R	TAL:	3/1R
DEORBIT:	3/1R	AOA:	3/1R
LANDING/SAFING:	3/3	ATO:	3/1R

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 40V76A117K84
PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD REMOVE REDUNDANT PROTECTION FROM
INADVERTENTLY POWERING A PAYLOAD BUS. SECOND FAILURE IN THE SAME
CIRCUIT WOULD SUPPLY POWER TO CERTAIN PAYLOAD LOADS. THIRD
FAILURE IN THE LOAD MAY PREMATURELY CAUSE AN ACTION THAT COULD
CAUSE LOSS OF CREW/VEHICLE.

REFERENCES: 76BJ6D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 2/1R
MDAC ID: 5992 ABORT: 2/1R

ITEM: RELAY, 4P TO PLBM-AC1
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST & CONT ASSY #1
- 3) MA73C PANEL
- 4) MMCA-3
- 5) RELAY, 4P TO PLBM-AC1
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	2/1R	AOA:	3/3
DEORBIT:	2/1R	ATO:	2/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 40V76A119K7
PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE POWER SOURCE TO DUAL
REDUNDANT POWERED FUNCTIONS. SECOND FAILURE COULD MAKE THESE
FUNCTIONS (PAYLOAD BAY DOOR LATCHES) INOPERATIVE. THIS IS VERY
LIKELY TO CAUSE LOSS OF CREW/VEHICLE ON ENTRY.

REFERENCES: 76BK23D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 5993 ABORT: 3/1R

ITEM: RELAY, 4P TO PLBM-AC1
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST & CONT ASSY #1
- 3) MA73C PANEL
- 4) MMCA-3
- 5) RELAY, 4P TO PLBM-AC1
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 40V76A119K7
PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD REMOVE REDUNDANT PROTECTION FROM
INADVERTENTLY POWERING A PAYLOAD BUS. SECOND FAILURE IN THE SAME
CIRCUIT WOULD SUPPLY POWER TO CERTAIN PAYLOAD LOADS. THIRD
FAILURE IN THE LOAD MAY PREMATURELY CAUSE AN ACTION THAT COULD
CAUSE LOSS OF CREW/VEHICLE.

REFERENCES: 76BK23D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 2/1R
MDAC ID: 5994 ABORT: 2/1R

ITEM: RELAY, 4P TO PLBM-AC1
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST & CONT ASSY #1
- 3) MA73C PANEL
- 4) MMCA-3
- 5) RELAY, 4P TO PLBM-AC1
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	2/1R	AOA:	3/3
DEORBIT:	2/1R	ATO:	2/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 40V76A119K9
PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE POWER SOURCE TO DUAL
REDUNDANT POWERED FUNCTIONS. SECOND FAILURE COULD MAKE THESE
FUNCTIONS (PAYLOAD BAY DOOR LATCHES) INOPERATIVE. THIS IS VERY
LIKELY TO CAUSE LOSS OF CREW/VEHICLE ON ENTRY.

REFERENCES: 76BK23E

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 5995 ABORT: 3/1R

ITEM: RELAY, 4P TO PLBM-AC1
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 1
- 2) INV DIST & CONT ASSY #1
- 3) MA73C PANEL
- 4) MMCA-3
- 5) RELAY, 4P TO PLBM-AC1
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 40V76A119K9
PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD REMOVE REDUNDANT PROTECTION FROM
INADVERTENTLY POWERING A PAYLOAD BUS. SECOND FAILURE IN THE SAME
CIRCUIT WOULD SUPPLY POWER TO CERTAIN PAYLOAD LOADS. THIRD
FAILURE IN THE LOAD MAY PREMATURELY CAUSE AN ACTION THAT COULD
CAUSE LOSS OF CREW/VEHICLE.

REFERENCES: 76BK23E

C-3

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 5996 ABORT: 3/1R

ITEM: CIRCUIT BREAKER, 3A (AC CONT 2 A)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) R1A1 PANEL
- 3) CIRCUIT BREAKER, 3A (AC CONT 2 A)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 32V73A1A1CB4
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF CONTROL POWER TO ONE INVERTER (ONE AC PHASE OF ONE AC BUS). SINCE THE INVERTERS ARE STARTED ON THE GROUND AND HAVE LATCHED POWER INPUTS, THIS FAILURE WOULD HAVE NO EFFECT ONCE THE INVERTERS WERE STARTED. HOWEVER, IF THIS FAILURE OCCURED AFTER A PHASE HAD TRIPPED OUT, THE PHASE COULD NOT BE RE-ENERGIZED. LOSS OF ALL CAPABILITY TO RE-POWER THE AC BUSES COULD RESULT IN LOSS OF CREW/VEHICLE.

REFERENCES: 76BM24H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5997 ABORT: 3/3

ITEM: CIRCUIT BREAKER, 3A (AC CONT 2 A)
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) R1A1 PANEL
- 3) CIRCUIT BREAKER, 3A (AC CONT 2 A)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 32V73A1A1CB4
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS CB IS CLOSED DURING NORMAL OPERATIONS AND THE CREW MAY SWITCH OUT THIS CIRCUIT WITH A TOGGLE SWITCH IN CASE OF AN OVERLOAD WHICH WOULD RESULT IN THE LOSS OF ONE PHASE OF THE AC BUS. SINCE MOST AC MOTORS CAN OPERATE ON TWO PHASES, THIS FAILURE PLUS AN OVERLOAD CONDITION WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BM24H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 5998 ABORT: 3/1R

ITEM: CIRCUIT BREAKER, 3A (AC CONT 2 B)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) R1A1 PANEL
- 3) CIRCUIT BREAKER, 3A (AC CONT 2 B)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 32V73A1A1CB5
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF CONTROL POWER TO ONE INVERTER (ONE AC PHASE OF ONE AC BUS). SINCE THE INVERTERS ARE STARTED ON THE GROUND AND HAVE LATCHED POWER INPUTS, THIS FAILURE WOULD HAVE NO EFFECT ONCE THE INVERTERS WERE STARTED. HOWEVER, IF THIS FAILURE OCCURED AFTER A PHASE HAD TRIPPED OUT, THE PHASE COULD NOT BE RE-ENERGIZED. LOSS OF ALL CAPABILITY TO RE-POWER THE AC BUSES COULD RESULT IN LOSS OF CREW/VEHICLE.

REFERENCES: 76BM24D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 5999 ABORT: 3/3

ITEM: CIRCUIT BREAKER, 3A (AC CONT 2 B)
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) R1A1 PANEL
- 3) CIRCUIT BREAKER, 3A (AC CONT 2 B)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 32V73A1A1CB5
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS CB IS CLOSED DURING NORMAL OPERATIONS AND THE CREW MAY SWITCH OUT THIS CIRCUIT WITH A TOGGLE SWITCH IN CASE OF AN OVERLOAD WHICH WOULD RESULT IN THE LOSS OF ONE PHASE OF THE AC BUS. SINCE MOST AC MOTORS CAN OPERATE ON TWO PHASES, THIS FAILURE PLUS AN OVERLOAD CONDITION WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BM24D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6000 ABORT: 3/1R

ITEM: CIRCUIT BREAKER, 3A (AC CONT 2 C)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) R1A1 PANEL
- 3) CIRCUIT BREAKER, 3A (AC CONT 2 C)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 32V73A1A1CB6
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF CONTROL POWER TO ONE INVERTER (ONE AC PHASE OF ONE AC BUS). SINCE THE INVERTERS ARE STARTED ON THE GROUND AND HAVE LATCHED POWER INPUTS, THIS FAILURE WOULD HAVE NO EFFECT ONCE THE INVERTERS WERE STARTED. HOWEVER, IF THIS FAILURE OCCURED AFTER A PHASE HAD TRIPPED OUT, THE PHASE COULD NOT BE RE-ENERGIZED. LOSS OF ALL CAPABILITY TO RE-POWER THE AC BUSES COULD RESULT IN LOSS OF CREW/VEHICLE.

REFERENCES: 76BM24C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6001 ABORT: 3/3

ITEM: CIRCUIT BREAKER, 3A (AC CONT 2 C)
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) R1A1 PANEL
- 3) CIRCUIT BREAKER, 3A (AC CONT 2 C)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES	
	HDW/FUNC	ABORT
PRELAUNCH:	3/3	RTLS: 3/3
LIFTOFF:	3/3	TAL: 3/3
ONORBIT:	3/3	AOA: 3/3
DEORBIT:	3/3	ATO: 3/3
LANDING/SAFING:	3/3	

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 32V73A1A1CB6
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS CB IS CLOSED DURING NORMAL OPERATIONS AND THE CREW MAY SWITCH OUT THIS CIRCUIT WITH A TOGGLE SWITCH IN CASE OF AN OVERLOAD WHICH WOULD RESULT IN THE LOSS OF ONE PHASE OF THE AC BUS. SINCE MOST AC MOTORS CAN OPERATE ON TWO PHASES, THIS FAILURE PLUS AN OVERLOAD CONDITION WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BM24C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6002 ABORT: 3/3

ITEM: SWITCH, TOGGLE 3PDT (INVERTER PWR #2)
FAILURE MODE: FAILS TO TRANSFER

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) R1A1 PANEL
- 3) MAIN DC DIST ASSY #2
- 4) SWITCH, TOGGLE 3PDT (INVERTER PWR #2)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 32V73A1A1S17
PART NUMBER: ME452-0102-7305

CAUSES: PIECE PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK,
CONTAMINATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT ON NORMAL FLIGHT OPERATIONS AS
THE AC INVERTERS ARE LATCHED ON DURING PRELAUNCH. ALTERNATE
MEANS EXIST TO TURN OFF ONE AC BUS PHASE IF REQUIRED.

REFERENCES: 76BM24

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6003 ABORT: 3/1R

ITEM: SWITCH, TOGGLE 3PDT (INVERTER PWR #2)
FAILURE MODE: INADVERTENT TRANSFER

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) R1A1 PANEL
- 3) MAIN DC DIST ASSY #2
- 4) SWITCH, TOGGLE 3PDT (INVERTER PWR #2)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	HDW/FUNC	CRITICALITIES	ABORT	HDW/FUNC
PRELAUNCH:	3/3		RTLS:	3/1R
LIFTOFF:	3/1R		TAL:	3/1R
ONORBIT:	3/1R		AOA:	3/1R
DEORBIT:	3/1R		ATO:	3/1R
LANDING/SAFING:	3/3			

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 32V73A1A1S17
PART NUMBER: ME452-0102-7305

CAUSES: PIECE PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK,
CONTAMINATION

EFFECTS/RATIONALE:

IF THIS FAILURE OCCURS TO THE "OFF" SIDE OF THE SWITCH, AT LEAST ONE INVERTER WILL BE SHUT DOWN AND COULD NOT BE RESTARTED. LOSS OF ALL REDUNDANCY MAY CAUSE LOSS OF CREW/VEHICLE DUE TO LOSS OF POWER TO CRITICAL LOADS.

REFERENCES: 76BM24

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6004 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE I (MN B TO INV 2 ON)
FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE PWR
- 2) ESS BUS 2CA
- 3) FLCA-2
- 4) HYBRID DRIVER TYPE I (MN B TO INV 2 ON)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A17AR4
PART NUMBER: MC477-0261-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,
PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:
THIS ITEM IS USED FOR GROUND C/O ONLY AND IS NON-CRITICAL FOR
FLIGHT OPERATIONS.

REFERENCES: 76BM18F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6005 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE I (MN B TO INV 2 ON)
FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE PWR
- 2) ESS BUS 2CA
- 3) FLCA-2
- 4) HYBRID DRIVER TYPE I (MN B TO INV 2 ON)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A17AR4
PART NUMBER: MC477-0261-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,
PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:
THIS ITEM IS USED FOR GROUND C/O ONLY AND IS NON-CRITICAL FOR
FLIGHT OPERATIONS.

REFERENCES: 76BM18F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6006 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE I (MN B TO INV 2 OFF)
FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) PRE-FLIGHT TEST BUS #2
- 3) FLCA-2
- 4) HYBRID DRIVER TYPE I (MN B TO INV 2 OFF)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A17AR5
PART NUMBER: MC477-0261-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,
PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS ITEM IS USED FOR GROUND C/O ONLY AND IS NON-CRITICAL FOR
FLIGHT OPERATIONS.

REFERENCES: 76BM18G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6007 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE I (MN B TO INV 2 OFF)
FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) PRE-FLIGHT TEST BUS #2
- 3) FLCA-2
- 4) HYBRID DRIVER TYPE I (MN B TO INV 2 OFF)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A17AR5
PART NUMBER: MC477-0261-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,
PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS ITEM IS USED FOR GROUND C/O ONLY AND IS NON-CRITICAL FOR
FLIGHT OPERATIONS.

REFERENCES: 76BM18G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6008 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE II (INV 2 A ON)
FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) FLCA-2
- 3) HYBRID DRIVER TYPE II (INV 2 A ON)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A17AR11
PART NUMBER: MC477-0262-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,
PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE LOSS OF INVERTER CONTROL INPUT SUCH THAT
THE INVERTER COULD NOT BE TURNED OFF. NORMAL FLIGHT PROCEDURE IS
TO LEAVE INVERTER RUNNING AND DISCONNECT ITS OUTPUT IF REQUIRED.
NO EFFECT ON CREW/VEHICLE/MISSION.

REFERENCES: 76BM17G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6009 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE II (INV 2 A ON)
FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) FLCA-2
- 3) HYBRID DRIVER TYPE II (INV 2 A ON)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A17AR11
PART NUMBER: MC477-0262-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,
PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF FULL INPUT POWER TO THE INVERTER (7.5A STILL AVAILABLE), CAUSING A LOW POWER PHASE ON ONE AC BUS. SINCE THE INVERTERS ARE STARTED ON THE GROUND AND LATCHED ON, THIS FAILURE WOULD HAVE NO EFFECT DURING NORMAL FLIGHT.

THIS FAILURE WOULD NOT BE DETECTABLE UNLESS AN INVERTER IS POWERED DOWN AND A RESTART IS ATTEMPTED. THIS IS AN OFF-NOMINAL PROCEDURE.

REFERENCES: 76BM17G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6010 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE II (INV 2 B ON)
FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) FLCA-2
- 3) HYBRID DRIVER TYPE II (INV 2 B ON)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A17AR12
PART NUMBER: MC477-0262-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,
PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE LOSS OF INVERTER CONTROL INPUT SUCH THAT
THE INVERTER COULD NOT BE TURNED OFF. NORMAL FLIGHT PROCEDURE IS
TO LEAVE INVERTER RUNNING AND DISCONNECT ITS OUTPUT IF REQUIRED.
NO EFFECT ON CREW/VEHICLE/MISSION.

REFERENCES: 76BM17D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6011 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE II (INV 2 B ON)
FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) FLCA-2
- 3) HYBRID DRIVER TYPE II (INV 2 B ON)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A17AR12
PART NUMBER: MC477-0262-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,
PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF FULL INPUT POWER TO THE INVERTER (7.5A STILL AVAILABLE), CAUSING A LOW POWER PHASE ON ONE AC BUS. SINCE THE INVERTERS ARE STARTED ON THE GROUND AND LATCHED ON, THIS FAILURE WOULD HAVE NO EFFECT DURING NORMAL FLIGHT.

THIS FAILURE WOULD NOT BE DETECTABLE UNLESS AN INVERTER IS POWERED DOWN AND A RESTART IS ATTEMPTED. THIS IS AN OFF-NOMINAL PROCEDURE.

REFERENCES: 76BM17D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6012 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE II (INV 2 C ON)
FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) FLCA-2
- 3) HYBRID DRIVER TYPE II (INV 2 C ON)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A17AR13
PART NUMBER: MC477-0262-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,
PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE LOSS OF INVERTER CONTROL INPUT SUCH THAT
THE INVERTER COULD NOT BE TURNED OFF. NORMAL FLIGHT PROCEDURE IS
TO LEAVE INVERTER RUNNING AND DISCONNECT ITS OUTPUT IF REQUIRED.
NO EFFECT ON CREW/VEHICLE/MISSION.

REFERENCES: 76BM17A

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6013 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE II (INV 2 C ON)
FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) FLCA-2
- 3) HYBRID DRIVER TYPE II (INV 2 C ON)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A17AR13
PART NUMBER: MC477-0262-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,
PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF FULL INPUT POWER TO THE INVERTER (7.5A STILL AVAILABLE), CAUSING A LOW POWER PHASE ON ONE AC BUS. SINCE THE INVERTERS ARE STARTED ON THE GROUND AND LATCHED ON, THIS FAILURE WOULD HAVE NO EFFECT DURING NORMAL FLIGHT.

THIS FAILURE WOULD NOT BE DETECTABLE UNLESS AN INVERTER IS POWERED DOWN AND A RESTART IS ATTEMPTED. THIS IS AN OFF-NOMINAL PROCEDURE.

REFERENCES: 76BM17A

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6014 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE III (INV 2 A ON)
FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) FLCA-2
- 3) HYBRID DRIVER TYPE III (INV 2 A ON)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A17AR14
PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,
PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF INPUT POWER CONTROL TO THE
INVERTER. NO EFFECT SINCE INVERTERS ARE STARTED ON THE GROUND
AND KEPT ON DURING A FLIGHT.

REFERENCES: 76BM16G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6015 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE III (INV 2 A ON)
FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) FLCA-2
- 3) HYBRID DRIVER TYPE III (INV 2 A ON)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	HDW/FUNC	CRITICALITIES	HDW/FUNC
PRELAUNCH:	3/3	ABORT	
LIFTOFF:	3/3	RTLS:	3/3
ONORBIT:	3/3	TAL:	3/3
DEORBIT:	3/3	AOA:	3/3
LANDING/SAFING:	3/3	ATO:	3/3

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A17AR14
PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,
PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF FULL POWER TO AN AC INVERTER (7.5A STILL AVAILABLE). WORST CASE IS THE LOSS OF ONE INVERTER BECAUSE IT COULD NOT BE RESTARTED WITH FULL POWER. INVERTERS ARE STARTED ON THE GROUND AND NORMALLY KEPT ON DURING A FLIGHT.

REFERENCES: 76BM16G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6016 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE III (INV 2 B ON)
FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) FLCA-2
- 3) HYBRID DRIVER TYPE III (INV 2 B ON)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		
	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A17AR15
PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,
PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF INPUT POWER CONTROL TO THE
INVERTER. NO EFFECT SINCE INVERTERS ARE STARTED ON THE GROUND
AND KEPT ON DURING A FLIGHT.

REFERENCES: 76BM16D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6017 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE III (INV 2 B ON)
FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) FLCA-2
- 3) HYBRID DRIVER TYPE III (INV 2 B ON)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	HDW/FUNC	CRITICALITIES	ABORT	HDW/FUNC
PRELAUNCH:	3/3		RTLS:	3/3
LIFTOFF:	3/3		TAL:	3/3
ONORBIT:	3/3		AOA:	3/3
DEORBIT:	3/3		ATO:	3/3
LANDING/SAFING:	3/3			

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A17AR15
PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,
PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF FULL POWER TO AN AC INVERTER (7.5A STILL AVAILABLE). WORST CASE IS THE LOSS OF ONE INVERTER BECAUSE IT COULD NOT BE RESTARTED WITH FULL POWER. INVERTERS ARE STARTED ON THE GROUND AND NORMALLY KEPT ON DURING A FLIGHT.

REFERENCES: 76BM16D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6018 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE III (INV 2 C ON)
FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) FLCA-2
- 3) HYBRID DRIVER TYPE III (INV 2 C ON)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A17AR16
PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,
PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF INPUT POWER CONTROL TO THE
INVERTER. NO EFFECT SINCE INVERTERS ARE STARTED ON THE GROUND
AND KEPT ON DURING A FLIGHT.

REFERENCES: 76BM16B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6019 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE III (INV 2 C ON)
FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) FLCA-2
- 3) HYBRID DRIVER TYPE III (INV 2 C ON)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A17AR16
PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,
PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF FULL POWER TO AN AC INVERTER (7.5A STILL AVAILABLE). WORST CASE IS THE LOSS OF ONE INVERTER BECAUSE IT COULD NOT BE RESTARTED WITH FULL POWER. INVERTERS ARE STARTED ON THE GROUND AND NORMALLY KEPT ON DURING A FLIGHT.

REFERENCES: 76BM16B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6020 ABORT: 3/1R

ITEM: HYBRID DRIVER TYPE III (INV 2 A OFF)
FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) FLCA-2
- 3) HYBRID DRIVER TYPE III (INV 2 A OFF)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 82V76A17AR17
PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,
PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD ENERGIZE THE "OFF" RELAY TO THE INVERTER
RESULTING IN THE LOSS OF ONE PHASE OF A THREE PHASE AC BUS. LOSS
OF ALL AC POWER COULD CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY
TO POWER CRITICAL LOADS.

REFERENCES: 76BM16H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6021 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE III (INV 2 A OFF)
FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) FLCA-2
- 3) HYBRID DRIVER TYPE III (INV 2 A OFF)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A17AR17
PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,
PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF ABILITY TO TURN THE INVERTER OFF. NO EFFECT ON CREW/MISSION/VEHICLE SINCE THE INVERTER OUTPUT CAN BE DISCONNECTED FROM ITS LOADS. INVERTERS ARE STARTED ON THE GROUND AND KEPT ON DURING A FLIGHT.

REFERENCES: 76BM16H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6022 ABORT: 3/1R

ITEM: HYBRID DRIVER TYPE III (INV 2 B OFF)
FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) FLCA-2
- 3) HYBRID DRIVER TYPE III (INV 2 B OFF)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 82V76A17AR18
PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,
PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD ENERGIZE THE "OFF" RELAY TO THE INVERTER
RESULTING IN THE LOSS OF ONE PHASE OF A THREE PHASE AC BUS. LOSS
OF ALL AC POWER COULD CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY
TO POWER CRITICAL LOADS.

REFERENCES: 76BM16E

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6023 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE III (INV 2 B OFF)
FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) FLCA-2
- 3) HYBRID DRIVER TYPE III (INV 2 B OFF)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A17AR18
PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,
PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF ABILITY TO TURN THE INVERTER OFF. NO EFFECT ON CREW/MISSION/VEHICLE SINCE THE INVERTER OUTPUT CAN BE DISCONNECTED FROM ITS LOADS. INVERTERS ARE STARTED ON THE GROUND AND KEPT ON DURING A FLIGHT.

REFERENCES: 76BM16E

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6024 ABORT: 3/1R

ITEM: HYBRID DRIVER TYPE III (INV 2 C OFF)
FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) FLCA-2
- 3) HYBRID DRIVER TYPE III (INV 2 C OFF)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 82V76A17AR19
PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,
PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD ENERGIZE THE "OFF" RELAY TO THE INVERTER
RESULTING IN THE LOSS OF ONE PHASE OF A THREE PHASE AC BUS. LOSS
OF ALL AC POWER COULD CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY
TO POWER CRITICAL LOADS.

REFERENCES: 76BM16C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6025 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE III (INV 2 C OFF)
FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) FLCA-2
- 3) HYBRID DRIVER TYPE III (INV 2 C OFF)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	HDW/FUNC	CRITICALITIES	HDW/FUNC
PRELAUNCH:	3/3	ABORT	
LIFTOFF:	3/3	RTLS:	3/3
ONORBIT:	3/3	TAL:	3/3
DEORBIT:	3/3	AOA:	3/3
LANDING/SAFING:	3/3	ATO:	3/3

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A17AR19
PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,
PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF ABILITY TO TURN THE INVERTER OFF. NO EFFECT ON CREW/MISSION/VEHICLE SINCE THE INVERTER OUTPUT CAN BE DISCONNECTED FROM ITS LOADS. INVERTERS ARE STARTED ON THE GROUND AND KEPT ON DURING A FLIGHT.

REFERENCES: 76BM16C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6026 ABORT: 3/3

ITEM: FUSE, 3A TO AC BUS 2 CMD
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) PRE-FLIGHT TEST BUS #2
- 3) FLCA-2
- 4) FUSE, 3A TO AC BUS 2 CMD
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A17F
PART NUMBER: ME451-0010-1030

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS CIRCUIT IS USED FOR GROUND C/O ONLY AND IS NOT POWERED DURING FLIGHT OPERATIONS.

REFERENCES: 76BN23H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6027 ABORT: 3/3

ITEM: FUSE, 3A TO AC BUS 2 CMD
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) PRE-FLIGHT TEST BUS #2
- 3) FLCA-2
- 4) FUSE, 3A TO AC BUS 2 CMD
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A17F
PART NUMBER: ME451-0010-1030

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS CIRCUIT IS USED FOR GROUND C/O ONLY AND IS NOT POWERED
DURING FLIGHT OPERATIONS.

REFERENCES: 76BN23G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6028 ABORT: 3/3

ITEM: FUSE, 3A TO AC BUS 2C OFF
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) FLCA-2
- 3) FUSE, 3A TO AC BUS 2C OFF
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A17F5
PART NUMBER: ME451-0010-1030

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE WOULD PREVENT THE CREW FROM CHANGING THE STATE OF THE LATCHING RELAY FOR ONE PHASE OF AN AC BUS. SINCE THE INVERTERS ARE STARTED ON THE GROUND AND LATCHED ON FOR THE DURATION OF THE FLIGHT, THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE. ALTERNATE MEANS OF REMOVING POWER FROM AN INVERTER EXIST IF IT WERE NECESSARY TO DO SO.

REFERENCES: 76BM16

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6029 ABORT: 3/3

ITEM: FUSE, 3A TO AC BUS 2B OFF
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) FLCA-2
- 3) FUSE, 3A TO AC BUS 2B OFF
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	HDW/FUNC	CRITICALITIES	ABORT	HDW/FUNC
PRELAUNCH:	3/3		RTLS:	3/3
LIFTOFF:	3/3		TAL:	3/3
ONORBIT:	3/3		AOA:	3/3
DEORBIT:	3/3		ATO:	3/3
LANDING/SAFING:	3/3			

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A17F6
PART NUMBER: ME451-0010-1030

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE WOULD PREVENT THE CREW FROM CHANGING THE STATE OF THE LATCHING RELAY FOR ONE PHASE OF AN AC BUS. SINCE THE INVERTERS ARE STARTED ON THE GROUND AND LATCHED ON FOR THE DURATION OF THE FLIGHT, THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE. ALTERNATE MEANS OF REMOVING POWER FROM AN INVERTER EXIST IF IT WERE NECESSARY TO DO SO.

REFERENCES: 76BM16E

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6030 ABORT: 3/3

ITEM: FUSE, 3A TO AC BUS 2A OFF
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) FLCA-2
- 3) FUSE, 3A TO AC BUS 2A OFF
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A17F7
PART NUMBER: ME451-0010-1030

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE WOULD PREVENT THE CREW FROM CHANGING THE STATE OF THE LATCHING RELAY FOR ONE PHASE OF AN AC BUS. SINCE THE INVERTERS ARE STARTED ON THE GROUND AND LATCHED ON FOR THE DURATION OF THE FLIGHT, THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE. ALTERNATE MEANS OF REMOVING POWER FROM AN INVERTER EXIST IF IT WERE NECESSARY TO DO SO.

REFERENCES: 76BM16H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6031 ABORT: 3/3

ITEM: FUSE, 3A TO AC BUS 2C ON
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) FLCA-2
- 3) FUSE, 3A TO AC BUS 2C ON
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A17F8
PART NUMBER: ME451-0010-1030

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE WOULD PREVENT THE CREW FROM CHANGING THE STATE OF THE LATCHING RELAY FOR ONE PHASE OF AN AC BUS. SINCE THE INVERTERS ARE STARTED ON THE GROUND AND LATCHED ON FOR THE DURATION OF THE FLIGHT, THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE. ALTERNATE MEANS OF REMOVING POWER FROM AN INVERTER EXIST IF IT WERE NECESSARY TO DO SO.

REFERENCES: 76BM16B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6032 ABORT: 3/1R

ITEM: FUSE, 80A TO INV 2 A
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) MAIN DC DIST ASSY #2
- 3) FPCA-2
- 4) FUSE, 80A TO INV 2 A
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 82V76A23F1
PART NUMBER: ME451-0016-0080

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF ONE INVERTER AC PHASE OUTPUT. LOSS OF ALL REDUNDANCY WOULD LIKELY CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

REFERENCES: 76BM13H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6033 ABORT: 3/1R

ITEM: FUSE, 80A TO INV 2 B
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) MAIN DC DIST ASSY #2
- 3) FPCA-2
- 4) FUSE, 80A TO INV 2 B
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	HDW/FUNC	CRITICALITIES	ABORT	HDW/FUNC
PRELAUNCH:	3/3		RTLS:	3/1R
LIFTOFF:	3/1R		TAL:	3/1R
ONORBIT:	3/1R		AOA:	3/1R
DEORBIT:	3/1R		ATO:	3/1R
LANDING/SAFING:	3/3			

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 82V76A23F2
PART NUMBER: ME451-0016-0080

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF ONE INVERTER AC PHASE OUTPUT. LOSS OF ALL REDUNDANCY WOULD LIKELY CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

REFERENCES: 76BM13E

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6034 ABORT: 3/1R

ITEM: FUSE, 80A TO INV 2 C
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) MAIN DC DIST ASSY #2
- 3) FPCA-2
- 4) FUSE, 80A TO INV 2 C
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 82V76A23F3
PART NUMBER: ME451-0016-0080

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF ONE INVERTER AC PHASE OUTPUT. LOSS OF ALL REDUNDANCY WOULD LIKELY CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

REFERENCES: 76BM13C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6035 ABORT: 3/3

ITEM: RESISTOR, 5.1K 1/4W (TO MDM OF2)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) MAIN DC DIST ASSY #2
- 3) FPCA-2
- 4) RESISTOR, 5.1K 1/4W (TO MDM OF2)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES	
	HDW/FUNC	ABORT
PRELAUNCH:	3/3	RTLS: 3/3
LIFTOFF:	3/3	TAL: 3/3
ONORBIT:	3/3	AOA: 3/3
DEORBIT:	3/3	ATO: 3/3
LANDING/SAFING:	3/3	

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A23A1R3
PART NUMBER: RLR07C512GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS ITEM SUPPORTS A NON-CRITICAL MEASUREMENT FUNCTION.
ALTERNATE INDICATORS (TALKBACKS) PROVIDE THE SAME FUNCTION.

REFERENCES: 76BM14H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6036 ABORT: 3/3

ITEM: RESISTOR, 5.1K 1/4W (TO MDM OF2)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) MAIN DC DIST ASSY #2
- 3) FPCA-2
- 4) RESISTOR, 5.1K 1/4W (TO MDM OF2)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A23A1R4
PART NUMBER: RLR07C512GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS ITEM SUPPORTS A NON-CRITICAL MEASUREMENT FUNCTION.
ALTERNATE INDICATORS (TALKBACKS) PROVIDE THE SAME FUNCTION.

REFERENCES: 76BM14E

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6037 ABORT: 3/3

ITEM: RESISTOR, 5.1K 1/4W (TO MDM OF2)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) MAIN DC DIST ASSY #2
- 3) FPCA-2
- 4) RESISTOR, 5.1K 1/4W (TO MDM OF2)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A23A1R5
PART NUMBER: RLR07C512GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS ITEM SUPPORTS A NON-CRITICAL MEASUREMENT FUNCTION.
ALTERNATE INDICATORS (TALKBACKS) PROVIDE THE SAME FUNCTION.

REFERENCES: 76BM14B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE:	3/11/87	HIGHEST CRITICALITY	HDW/FUNC
SUBSYSTEM:	EPD&C	FLIGHT:	3/3
MDAC ID:	6038	ABORT:	3/3

ITEM: DIODE, ISOLATION
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) R1A1 PANEL
- 3) FPCA-2
- 4) DIODE, ISOLATION
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A23A1CR1
PART NUMBER: JANTXV1N4246

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS IN A NON-CRITICAL MEASUREMENT CIRCUIT. ALTERNATE
MEANS OF MEASURING ARE AVAILABLE. NO EFFECT ON
CREW/MISSION/VEHICLE.

REFERENCES: 76BM13G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6039

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

ITEM: DIODE, ISOLATION
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER

SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) R1A1 PANEL
- 3) FPCA-2
- 4) DIODE, ISOLATION
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A23A1CR1
PART NUMBER: JANTXV1N4246

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS IN A NON-CRITICAL MEASUREMENT CIRCUIT. ALTERNATE
MEANS OF MEASURING ARE AVAILABLE. NO EFFECT ON
CREW/MISSION/VEHICLE.

REFERENCES: 76BM13G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6040 ABORT: 3/3

ITEM: DIODE, ISOLATION
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) R1A1 PANEL
- 3) FPCA-2
- 4) DIODE, ISOLATION
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		
	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A23A1CR4
PART NUMBER: JANTXV1N4246

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS IN A NON-CRITICAL MEASUREMENT CIRCUIT. ALTERNATE
MEANS OF MEASURING ARE AVAILABLE. NO EFFECT ON
CREW/MISSION/VEHICLE.

REFERENCES: 76BM13D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6041 ABORT: 3/3

ITEM: DIODE, ISOLATION
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) R1A1 PANEL
- 3) FPCA-2
- 4) DIODE, ISOLATION
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A23A1CR4
PART NUMBER: JANTXV1N4246

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS IN A NON-CRITICAL MEASUREMENT CIRCUIT. ALTERNATE
MEANS OF MEASURING ARE AVAILABLE. NO EFFECT ON
CREW/MISSION/VEHICLE.

REFERENCES: 76BM13D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6042

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

ITEM: DIODE, ISOLATION
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER

SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) R1A1 PANEL
- 3) FPCA-2
- 4) DIODE, ISOLATION
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A23A1CR3
PART NUMBER: JANTXV1N4246

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS IN A NON-CRITICAL MEASUREMENT CIRCUIT. ALTERNATE
MEANS OF MEASURING ARE AVAILABLE. NO EFFECT ON
CREW/MISSION/VEHICLE.

REFERENCES: 76BM13B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6043 ABORT: 3/3

ITEM: DIODE, ISOLATION
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) R1A1 PANEL
- 3) FPCA-2
- 4) DIODE, ISOLATION
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A23A1CR3
PART NUMBER: JANTXV1N4246

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS IN A NON-CRITICAL MEASUREMENT CIRCUIT. ALTERNATE
MEANS OF MEASURING ARE AVAILABLE. NO EFFECT ON
CREW/MISSION/VEHICLE.

REFERENCES: 76BM13B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE:	3/11/87	HIGHEST CRITICALITY	HDW/FUNC
SUBSYSTEM:	EPD&C	FLIGHT:	3/3
MDAC ID:	6044	ABORT:	3/3

ITEM: DIODE TO INV 2 A
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER

SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) MAIN DC DIST ASSY #2
- 3) FPCA-2
- 4) DIODE TO INV 2 A
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES	
	HDW/FUNC	ABORT
PRELAUNCH:	3/3	RTLS: 3/3
LIFTOFF:	3/3	TAL: 3/3
ONORBIT:	3/3	AOA: 3/3
DEORBIT:	3/3	ATO: 3/3
LANDING/SAFING:	3/3	

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A23CR22
PART NUMBER:

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF INPUT CURRENT SURGE PROTECTION TO THE INVERTER. SINCE THE INVERTERS ARE STARTED ON THE GROUND AND LATCHED "ON", THIS FAILURE WOULD HAVE NO EFFECT DURING A NORMAL MISSION. IF THE INVERTER HAD TO BE RESTARTED DURING FLIGHT, IT MIGHT BE DAMAGED OR LOST. HOWEVER, THERE ARE ENOUGH REDUNDANT AC BUSES TO HANDLE THE LOADS.

REFERENCES: 76BM12F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6045 ABORT: 3/3

ITEM: DIODE TO INV 2 A
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) MAIN DC DIST ASSY #2
- 3) FPCA-2
- 4) DIODE TO INV 2 A
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A23CR22
PART NUMBER:

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE AS
THERE IS NO CURRENT FLOW THROUGH THIS DIODE AFTER INVERTER START
UP.

REFERENCES: 76BM12F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6047 ABORT: 3/3

ITEM: DIODE TO INV 2 B
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) MAIN DC DIST ASSY #2
- 3) FPCA-2
- 4) DIODE TO INV 2 B
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A23CR23
PART NUMBER:

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE AS
THERE IS NO CURRENT FLOW THROUGH THIS DIODE AFTER INVERTER START
UP.

REFERENCES: 76BM12D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6048 ABORT: 3/3

ITEM: DIODE TO INV 2 C
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) MAIN DC DIST ASSY #2
- 3) FPCA-2
- 4) DIODE TO INV 2 C
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A23CR24
PART NUMBER:

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF INPUT CURRENT SURGE PROTECTION TO THE INVERTER. SINCE THE INVERTERS ARE STARTED ON THE GROUND AND LATCHED "ON", THIS FAILURE WOULD HAVE NO EFFECT DURING A NORMAL MISSION. IF THE INVERTER HAD TO BE RESTARTED DURING FLIGHT, IT MIGHT BE DAMAGED OR LOST. HOWEVER, THERE ARE ENOUGH REDUNDANT AC BUSES TO HANDLE THE LOADS.

REFERENCES: 76BM12B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6049 ABORT: 3/3

ITEM: DIODE TO INV 2 C
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) MAIN DC DIST ASSY #2
- 3) FPCA-2
- 4) DIODE TO INV 2 C
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A23CR24
PART NUMBER:

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE AS
THERE IS NO CURRENT FLOW THROUGH THIS DIODE AFTER INVERTER START
UP.

REFERENCES: 76BM12B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6050 ABORT: 3/3

ITEM: RPC, 7.5A TO INV 2 A
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) MAIN DC DIST ASSY #2
- 3) FPCA-2
- 4) RPC, 7.5A TO INV 2 A
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A23RPC7
PART NUMBER: MC450-0017-1075

CAUSES: PIECE PART STRUCTURAL FAILURE, CONTAMINATION, MECH
SHOCK, THERMAL STRESS, VIBRATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD PREVENT THE AC INVERTER FROM BEING TURNED OFF.
HOWEVER THE INPUT CURRENT WOULD BE LIMITED TO 7.5 AMPS.
INVERTERS ARE NORMALLY ON DURING FLIGHT OPERATIONS, SO NO EFFECT
ON CREW/MISSION/VEHICLE.

REFERENCES: 76BM12F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6051 ABORT: 3/3

ITEM: RPC, 7.5A TO INV 2 A
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) MAIN DC DIST ASSY #2
- 3) FPCA-2
- 4) RPC, 7.5A TO INV 2 A
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A23RPC7
PART NUMBER: MC450-0017-1075

CAUSES: PIECE PART STRUCTURAL FAILURE, CONTAMINATION, MECH
SHOCK, THERMAL STRESS, VIBRATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF CURRENT SURGE PROTECTION ON THE INVERTER STARTUP. SINCE THE INVERTERS ARE STARTED ON THE GROUND AN IN-FLIGHT FAILURE WOULD HAVE NO EFFECT. IF AN INVERTER RESTART IS NEEDED IN-FLIGHT, IT MAY BE DAMAGED OR LOST.

REFERENCES: 76BM12F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE:	3/11/87	HIGHEST CRITICALITY	HDW/FUNC
SUBSYSTEM:	EPD&C	FLIGHT:	3/3
MDAC ID:	6052	ABORT:	3/3

ITEM: RPC, 7.5A TO INV 2 B
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) MAIN DC DIST ASSY #2
- 3) FPCA-2
- 4) RPC, 7.5A TO INV 2 B
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A23RPC8
PART NUMBER: MC450-0017-1075

CAUSES: PIECE PART STRUCTURAL FAILURE, CONTAMINATION, MECH
SHOCK, THERMAL STRESS, VIBRATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD PREVENT THE AC INVERTER FROM BEING TURNED OFF.
HOWEVER THE INPUT CURRENT WOULD BE LIMITED TO 7.5 AMPS.
INVERTERS ARE NORMALLY ON DURING FLIGHT OPERATIONS, SO NO EFFECT
ON CREW/MISSION/VEHICLE.

REFERENCES: 76BM12D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6053 ABORT: 3/3

ITEM: RPC, 7.5A TO INV 2 B
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) MAIN DC DIST ASSY #2
- 3) FPCA-2
- 4) RPC, 7.5A TO INV 2 B
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A23RPC8
PART NUMBER: MC450-0017-1075

CAUSES: PIECE PART STRUCTURAL FAILURE, CONTAMINATION, MECH
SHOCK, THERMAL STRESS, VIBRATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF CURRENT SURGE PROTECTION ON THE INVERTER STARTUP. SINCE THE INVERTERS ARE STARTED ON THE GROUND AN IN-FLIGHT FAILURE WOULD HAVE NO EFFECT. IF AN INVERTER RESTART IS NEEDED IN-FLIGHT, IT MAY BE DAMAGED OR LOST.

REFERENCES: 76BM12D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6054 ABORT: 3/3

ITEM: RPC, 7.5A TO INV 2 C
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) MAIN DC DIST ASSY #2
- 3) FPCA-2
- 4) RPC, 7.5A TO INV 2 C
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A23RPC9
PART NUMBER: MC450-0017-1075

CAUSES: PIECE PART STRUCTURAL FAILURE, CONTAMINATION, MECH
SHOCK, THERMAL STRESS, VIBRATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD PREVENT THE AC INVERTER FROM BEING TURNED OFF.
HOWEVER THE INPUT CURRENT WOULD BE LIMITED TO 7.5 AMPS.
INVERTERS ARE NORMALLY ON DURING FLIGHT OPERATIONS, SO NO EFFECT
ON CREW/MISSION/VEHICLE.

REFERENCES: 76BM12A

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6055 ABORT: 3/3

ITEM: RPC, 7.5A TO INV 2 C
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) MAIN DC DIST ASSY #2
- 3) FPCA-2
- 4) RPC, 7.5A TO INV 2 C
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A23RPC9
PART NUMBER: MC450-0017-1075

CAUSES: PIECE PART STRUCTURAL FAILURE, CONTAMINATION, MECH
SHOCK, THERMAL STRESS, VIBRATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF CURRENT SURGE PROTECTION ON THE INVERTER STARTUP. SINCE THE INVERTERS ARE STARTED ON THE GROUND AN IN-FLIGHT FAILURE WOULD HAVE NO EFFECT. IF AN INVERTER RESTART IS NEEDED IN-FLIGHT, IT MAY BE DAMAGED OR LOST.

REFERENCES: 76BM12A

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6056 ABORT: 3/1R

ITEM: RELAY, LATCHING TO INVERTER 2A
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) R1A1 PANEL
- 3) FLCA-2
- 4) FPCA-2
- 5) RELAY, LATCHING TO INVERTER 2A
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 82V76A23K1
PART NUMBER: MC455-0128-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE LOSS OF DC POWER TO THE INVERTER
RESULTING IN THE LOSS OF ONE PHASE OF THE THREE PHASE AC BUS.
REDUNDANT POWER IS AVAILABLE FOR CRITICAL LOADS. LOSS OF ALL
REDUNDANCY MAY CAUSE LOSS OF CREW/VEHICLE DUE TO LOSS OF POWER TO
CRITICAL LOADS.

REFERENCES: 76BM13H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6057 ABORT: 3/3

ITEM: RELAY, LATCHING TO INVERTER 2A
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) R1A1 PANEL
- 3) FLCA-2
- 4) FPCA-2
- 5) RELAY, LATCHING TO INVERTER 2A
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A23K1
PART NUMBER: MC455-0128-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD PREVENT REMOVING DC POWER TO THE INPUT OF THE
INVERTER. NO EFFECT ON CREW/MISSION/VEHICLE AS THIS IS NORMAL
FLIGHT CONFIGURATION.

REFERENCES: 76BM13H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6058 ABORT: 3/1R

ITEM: RELAY, LATCHING TO INVERTER 2B
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) R1A1 PANEL
- 3) FLCA-2
- 4) FPCA-2
- 5) RELAY, LATCHING TO INVERTER 2B
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 82V76A23K2
PART NUMBER: MC455-0128-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE LOSS OF DC POWER TO THE INVERTER
RESULTING IN THE LOSS OF ONE PHASE OF THE THREE PHASE AC BUS.
REDUNDANT POWER IS AVAILABLE FOR CRITICAL LOADS. LOSS OF ALL
REDUNDANCY MAY CAUSE LOSS OF CREW/VEHICLE DUE TO LOSS OF POWER TO
CRITICAL LOADS.

REFERENCES: 76BM13E

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6059 ABORT: 3/3

ITEM: RELAY, LATCHING TO INVERTER 2B
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) R1A1 PANEL
- 3) FLCA-2
- 4) FPCA-2
- 5) RELAY, LATCHING TO INVERTER 2B
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A23K2
PART NUMBER: MC455-0128-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD PREVENT REMOVING DC POWER TO THE INPUT OF THE
INVERTER. NO EFFECT ON CREW/MISSION/VEHICLE AS THIS IS NORMAL
FLIGHT CONFIGURATION.

REFERENCES: 76BM13E

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6060 ABORT: 3/1R

ITEM: RELAY, LATCHING TO INVERTER 2C
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) R1A1 PANEL
- 3) FLCA-2
- 4) FPCA-2
- 5) RELAY, LATCHING TO INVERTER 2C
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 82V76A23K3
PART NUMBER: MC455-0128-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE LOSS OF DC POWER TO THE INVERTER
RESULTING IN THE LOSS OF ONE PHASE OF THE THREE PHASE AC BUS.
REDUNDANT POWER IS AVAILABLE FOR CRITICAL LOADS. LOSS OF ALL
REDUNDANCY MAY CAUSE LOSS OF CREW/VEHICLE DUE TO LOSS OF POWER TO
CRITICAL LOADS.

REFERENCES: 76BM13C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6061 ABORT: 3/3

ITEM: RELAY, LATCHING TO INVERTER 2C
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) R1A1 PANEL
- 3) FLCA-2
- 4) FPCA-2
- 5) RELAY, LATCHING TO INVERTER 2C
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	HDW/FUNC	CRITICALITIES	ABORT	HDW/FUNC
PRELAUNCH:	3/3		RTLS:	3/3
LIFTOFF:	3/3		TAL:	3/3
ONORBIT:	3/3		AOA:	3/3
DEORBIT:	3/3		ATO:	3/3
LANDING/SAFING:	3/3			

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A23K3
PART NUMBER: MC455-0128-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD PREVENT REMOVING DC POWER TO THE INPUT OF THE
INVERTER. NO EFFECT ON CREW/MISSION/VEHICLE AS THIS IS NORMAL
FLIGHT CONFIGURATION.

REFERENCES: 76BM13C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6062 ABORT: 3/1R

ITEM: INVERTER 2 A
FAILURE MODE: FAILS OFF, OUTPUT UNDER/OVER VOLTAGE

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) R1A1 PANEL
- 3) FLCA-2
- 4) FPCA-2
- 5) INVERTER 2 A
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 82V76A4
PART NUMBER: MC495-0012-0004

CAUSES: TEMPERATURE, MECH SHOCK, VIBRATION, PIECE-PART
STRUCTURAL FAILURE

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE THE LOSS OF ONE PHASE OF THE THREE PHASE AC BUS. MOST MOTORS ON THE VEHICLE CAN OPERATE ON TWO PHASES. CRITICAL LOADS ARE REDUNDANTLY POWERED FROM THE OTHER TWO BUSES. LOSS OF ALL REDUNDANCY WOULD CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

REFERENCES: 76BM10H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6063 ABORT: 3/3

ITEM: INVERTER 2 A
FAILURE MODE: OVERLOAD SIGNAL FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) R1A1 PANEL
- 3) FLCA-2
- 4) FPCA-2
- 5) INVERTER 2 A
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A4
PART NUMBER: MC495-0012-0004

CAUSES: TEMPERATURE, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE PREVENTS THE AUTOMATIC CUT OFF OF THE OVERLOADED INVERTER. CREW MAY BE ABLE TO DETECT OVERLOAD CONDITION VIA OVER/UNDER VOLTAGE SENSORS.

REFERENCES: 76BM10H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6064 ABORT: 3/1R

ITEM: INVERTER 2 A
FAILURE MODE: INADVERTENT OVERLOAD SIGNAL OUTPUT

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) R1A1 PANEL
- 3) FLCA-2
- 4) FPCA-2
- 5) INVERTER 2 A
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 82V76A4
PART NUMBER: MC495-0012-0004

CAUSES: TEMPERATURE, VIBRATION, MECH SHOCK, CONTAMINATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE ONE PHASE OF THE THREE PHASE AC BUS TO BE LOST. THE PHASE COULD BE RESTORED BY CREW ACTION AND THE SIGNAL INHIBITED. MULTIPLE FAILURES OF THIS MODE MAY CAUSE LOSS OF CREW VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

REFERENCES: 76BM10H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6065 ABORT: 3/1R

ITEM: INVERTER 2 A
FAILURE MODE: PHASE REF CHANGE

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) R1A1 PANEL
- 3) FLCA-2
- 4) FPCA-2
- 5) INVERTER 2 A
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 82V76A4
PART NUMBER: MC495-0012-0004

CAUSES: PIECE PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD PROBABLY CAUSE AN OVERLOAD SIGNAL TO BE OUTPUT AND ALL THREE PHASES OF ONE AC BUS WOULD BE CUT OFF. CRITICAL LOADS ARE REDUNDANTLY POWERED SO NO EFFECT ON FIRST FAILURE. LOSS OF ALL REDUNDANCY WOULD PROBABLY CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

REFERENCES: 76BM10H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE:	3/11/87	HIGHEST CRITICALITY	HDW/FUNC
SUBSYSTEM:	EPD&C	FLIGHT:	3/1R
MDAC ID:	6066	ABORT:	3/1R

ITEM: INVERTER 2 B
FAILURE MODE: FAILS OFF, OUTPUT UNDER/OVER VOLTAGE

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) R1A1 PANEL
- 3) FLCA-2
- 4) FPCA-2
- 5) INVERTER 2 B
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 82V76A5
PART NUMBER: MC495-0012-0004

CAUSES: TEMPERATURE, MECH SHOCK, VIBRATION, PIECE-PART
STRUCTURAL FAILURE

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE THE LOSS OF ONE PHASE OF THE THREE PHASE AC BUS. MOST MOTORS ON THE VEHICLE CAN OPERATE ON TWO PHASES. CRITICAL LOADS ARE REDUNDANTLY POWERED FROM THE OTHER TWO BUSES. LOSS OF ALL REDUNDANCY WOULD CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

REFERENCES: 76BM10E

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6067 ABORT: 3/3

ITEM: INVERTER 2 B
FAILURE MODE: OVERLOAD SIGNAL FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) R1A1 PANEL
- 3) FLCA-2
- 4) FPCA-2
- 5) INVERTER 2 B
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		
	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A5
PART NUMBER: MC495-0012-0004

CAUSES: TEMPERATURE, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE PREVENTS THE AUTOMATIC CUT OFF OF THE OVERLOADED INVERTER. CREW MAY BE ABLE TO DETECT OVERLOAD CONDITION VIA OVER/UNDER VOLTAGE SENSORS.

REFERENCES: 76BM10E

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6068 ABORT: 3/1R

ITEM: INVERTER 2 B
FAILURE MODE: INADVERTENT OVERLOAD SIGNAL OUTPUT

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) R1A1 PANEL
- 3) FLCA-2
- 4) FPCA-2
- 5) INVERTER 2 B
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 82V76A5
PART NUMBER: MC495-0012-0004

CAUSES: TEMPERATURE, VIBRATION, MECH SHOCK, CONTAMINATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE ONE PHASE OF THE THREE PHASE AC BUS TO BE LOST. THE PHASE COULD BE RESTORED BY CREW ACTION AND THE SIGNAL INHIBITED. MULTIPLE FAILURES OF THIS MODE MAY CAUSE LOSS OF CREW VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

REFERENCES: 76BM10E

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6069 ABORT: 3/1R

ITEM: INVERTER 2 B
FAILURE MODE: PHASE REF CHANGE

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) R1A1 PANEL
- 3) FLCA-2
- 4) FPCA-2
- 5) INVERTER 2 B
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 82V76A5
PART NUMBER: MC495-0012-0004

CAUSES: PIECE PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD PROBABLY CAUSE AN OVERLOAD SIGNAL TO BE OUTPUT AND ALL THREE PHASES OF ONE AC BUS WOULD BE CUT OFF. CRITICAL LOADS ARE REDUNDANTLY POWERED SO NO EFFECT ON FIRST FAILURE. LOSS OF ALL REDUNDANCY WOULD PROBABLY CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

REFERENCES: 76BM10E

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6070 ABORT: 3/1R

ITEM: INVERTER 2 C
FAILURE MODE: FAILS OFF, OUTPUT UNDER/OVER VOLTAGE

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) R1A1 PANEL
- 3) FLCA-2
- 4) FPCA-2
- 5) INVERTER 2 C
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 82V76A6
PART NUMBER: MC495-0012-0004

CAUSES: TEMPERATURE, MECH SHOCK, VIBRATION, PIECE-PART
STRUCTURAL FAILURE

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE THE LOSS OF ONE PHASE OF THE THREE PHASE AC BUS. MOST MOTORS ON THE VEHICLE CAN OPERATE ON TWO PHASES. CRITICAL LOADS ARE REDUNDANTLY POWERED FROM THE OTHER TWO BUSSES. LOSS OF ALL REDUNDANCY WOULD CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

REFERENCES: 76BM10C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6071 ABORT: 3/3

ITEM: INVERTER 2 C
FAILURE MODE: OVERLOAD SIGNAL FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) R1A1 PANEL
- 3) FLCA-2
- 4) FPCA-2
- 5) INVERTER 2 C
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A6
PART NUMBER: MC495-0012-0004

CAUSES: TEMPERATURE, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE PREVENTS THE AUTOMATIC CUT OFF OF THE OVERLOADED INVERTER. CREW MAY BE ABLE TO DETECT OVERLOAD CONDITION VIA OVER/UNDER VOLTAGE SENSORS.

REFERENCES: 76BM10C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6072 ABORT: 3/1R

ITEM: INVERTER 2 C
FAILURE MODE: INADVERTENT OVERLOAD SIGNAL OUTPUT

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) R1A1 PANEL
- 3) FLCA-2
- 4) FPCA-2
- 5) INVERTER 2 C
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 82V76A6
PART NUMBER: MC495-0012-0004

CAUSES: TEMPERATURE, VIBRATION, MECH SHOCK, CONTAMINATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE ONE PHASE OF THE THREE PHASE AC BUS TO BE LOST. THE PHASE COULD BE RESTORED BY CREW ACTION AND THE SIGNAL INHIBITED. MULTIPLE FAILURES OF THIS MODE MAY CAUSE LOSS OF CREW VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

REFERENCES: 76BM10C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6073

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/1R
ABORT: 3/1R

ITEM: INVERTER 2 C
FAILURE MODE: PHASE REF CHANGE

LEAD ANALYST: K. SCHMECKPEPER

SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) R1A1 PANEL
- 3) FLCA-2
- 4) FPCA-2
- 5) INVERTER 2 C
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 82V76A6
PART NUMBER: MC495-0012-0004

CAUSES: PIECE PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD PROBABLY CAUSE AN OVERLOAD SIGNAL TO BE OUTPUT AND ALL THREE PHASES OF ONE AC BUS WOULD BE CUT OFF. CRITICAL LOADS ARE REDUNDANTLY POWERED SO NO EFFECT ON FIRST FAILURE. LOSS OF ALL REDUNDANCY WOULD PROBABLY CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

REFERENCES: 76BM10C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6074 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE III (AC BUS 2 ON)
FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) PRE-FLIGHT TEST BUS #2
- 3) FLCA-2
- 4) HYBRID DRIVER TYPE III (AC BUS 2 ON)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A17AR9
PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,
PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:
THIS ITEM IS USED FOR GROUND C/O ONLY.

REFERENCES: 76BN23G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6075 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE III (AC BUS 2 ON)
FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) PRE-FLIGHT TEST BUS #2
- 3) FLCA-2
- 4) HYBRID DRIVER TYPE III (AC BUS 2 ON)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A17AR9
PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,
PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:
THIS ITEM IS USED FOR GROUND C/O ONLY.

REFERENCES: 76BN23G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6076 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE III (AC BUS 2 OFF)
FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) PRE-FLIGHT TEST BUS #2
- 3) FLCA-2
- 4) HYBRID DRIVER TYPE III (AC BUS 2 OFF)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A17AR10
PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,
PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:
THIS ITEM IS USED FOR GROUND C/O ONLY.

REFERENCES: 76BN23H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6077 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE III (AC BUS 2 OFF)
FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) PRE-FLIGHT TEST BUS #2
- 3) FLCA-2
- 4) HYBRID DRIVER TYPE III (AC BUS 2 OFF)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	HDW/FUNC	CRITICALITIES	ABORT	HDW/FUNC
PRELAUNCH:	3/3		RTLS:	3/3
LIFTOFF:	3/3		TAL:	3/3
ONORBIT:	3/3		AOA:	3/3
DEORBIT:	3/3		ATO:	3/3
LANDING/SAFING:	3/3			

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A17AR10
PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,
PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:
THIS ITEM IS USED FOR GROUND C/O ONLY.

REFERENCES: 76BN23H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6078 ABORT: 3/3

ITEM: FUSE, 3A TO AC BUS 2B ON
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) FLCA-2
- 3) FUSE, 3A TO AC BUS 2B ON
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		
	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A17F9
PART NUMBER: ME451-0010-1030

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE WOULD PREVENT THE CREW FROM CHANGING THE STATE OF THE LATCHING RELAY FOR ONE PHASE OF AN AC BUS. SINCE THE INVERTERS ARE STARTED ON THE GROUND AND LATCHED ON FOR THE DURATION OF THE FLIGHT, THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE. ALTERNATE MEANS OF REMOVING POWER FROM AN INVERTER EXIST IF IT WERE NECESSARY TO DO SO.

REFERENCES: 76BM16D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6079 ABORT: 3/3

ITEM: FUSE, 3A TO AC BUS 2A ON
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) FLCA-2
- 3) FUSE, 3A TO AC BUS 2A ON
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A17F10
PART NUMBER: ME451-0010-1030

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE WOULD PREVENT THE CREW FROM CHANGING THE STATE OF THE LATCHING RELAY FOR ONE PHASE OF AN AC BUS. SINCE THE INVERTERS ARE STARTED ON THE GROUND AND LATCHED ON FOR THE DURATION OF THE FLIGHT, THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE. ALTERNATE MEANS OF REMOVING POWER FROM AN INVERTER EXIST IF IT WERE NECESSARY TO DO SO.

REFERENCES: 76BM16G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6080 ABORT: 3/1R

ITEM: SWITCH, TOGGLE 3PDT (INV/AC BUS 2)
FAILURE MODE: FAILS TO TRANSFER

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) R1A1 PANEL
- 3) MAIN DC DIST ASSY #2
- 4) SWITCH, TOGGLE 3PDT (INV/AC BUS 2)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 32V73A1A1S20
PART NUMBER: ME452-0102-7305

CAUSES: PIECE PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK,
CONTAMINATION

EFFECTS/RATIONALE:

IF THE AC BUS RELAY IS TRIPPED OFF BY THE AC OVER/UNDER VOLTAGE
SENSOR AND THIS FAILURE OCCURS, THE RESULT IS THE LOSS OF ONE
PHASE OF THE AC BUS. LOSS OF ALL REDUNDANCY WOULD CAUSE LOSS OF
CREW/VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

REFERENCES: 76BN24F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6081 ABORT: 3/1R

ITEM: SWITCH, TOGGLE 3PDT (INV/AC BUS 2)
FAILURE MODE: INADVERTENT TRANSFER

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) R1A1 PANEL
- 3) MAIN DC DIST ASSY #2
- 4) SWITCH, TOGGLE 3PDT (INV/AC BUS 2)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 32V73A1A1S20
PART NUMBER: ME452-0102-7305

CAUSES: PIECE PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK,
CONTAMINATION

EFFECTS/RATIONALE:

THIS FAILURE COULD DISCONNECT ONE PHASE OF THE AC BUS FROM THE
INVERTER. LOSS OF ALL REDUNDANCY WOULD CAUSE LOSS OF
CREW/VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

REFERENCES: 76BN24F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6082 ABORT: 3/1R

ITEM: CIRCUIT BREAKER, 3A TO AC2 BUS SENSOR
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) 013 PANEL
- 3) CIRCUIT BREAKER, 3A TO AC2 BUS SENSOR
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		
	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 33V73A13CB11
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

WORST CASE FAILURE OCCURS WHEN THE SENSOR MONITOR/AUTO SWITCH
FAILS ALSO. THE RESULT IS LOSS OF CAPABILITY TO DETECT AND
CORRECT AN INVERTER/AC BUS ERROR CONDITION. LOSS OF ALL AC POWER
WOULD LIKELY CAUSE LOSS OF CREW/VEHICLE DUE TO LACK OF POWER TO
CRITICAL LOADS.

REFERENCES: 76BN24B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6083 ABORT: 3/1R

ITEM: CIRCUIT BREAKER, 3A TO AC2 BUS SENSOR
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) 013 PANEL
- 3) CIRCUIT BREAKER, 3A TO AC2 BUS SENSOR
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		
	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 33V73A13CB11
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

WORST CASE FAILURE OCCURS WHEN THE SENSOR MONITOR/AUTO SWITCH
FAILS ALSO. THE RESULT IS LOSS OF CAPABILITY TO DETECT AND
CORRECT AN INVERTER/AC BUS ERROR CONDITION. LOSS OF ALL AC POWER
WOULD LIKELY CAUSE LOSS OF CREW/VEHICLE DUE TO LACK OF POWER TO
CRITICAL LOADS.

REFERENCES: 76BN24B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6084 ABORT: 3/1R

ITEM: SWITCH, TOGGLE SPDT (AC 2 BUS SNSR)
FAILURE MODE: FAILS TO TRANSFER

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) 013 PANEL
- 3) R1A1 PANEL
- 4) SWITCH, TOGGLE SPDT (AC 2 BUS SNSR)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/3	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 32V73A1A1S23
PART NUMBER: ME452-0102-7103

CAUSES: PIECE PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK,
CONTAMINATION

EFFECTS/RATIONALE:

WORST CASE FAILURE IS LOSS OF CONTROL OF THE AC OVER/UNDER
VOLTAGE SENSOR WHICH COULD PREVENT THE DETECTION AND CORRECTION
OF AN INVERTER/AC BUS ERROR CONDITION. LOSS OF ALL REDUNDANCY
COULD LEAD TO LOSS OF CREW/VEHICLE DUE TO LOSS OF POWER TO LOADS.

REFERENCES: 76BN22B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6085 ABORT: 3/1R

ITEM: SWITCH, TOGGLE SPDT (AC 2 BUS SNSR)
FAILURE MODE: INADVERTENT TRANSFER

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) 013 PANEL
- 3) R1A1 PANEL
- 4) SWITCH, TOGGLE SPDT (AC 2 BUS SNSR)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/3	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 32V73A1A1S23
PART NUMBER: ME452-0102-7103

CAUSES: PIECE PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK,
CONTAMINATION

EFFECTS/RATIONALE:

WORST CASE FAILURE IS LOSS OF CONTROL OF THE AC OVER/UNDER
VOLTAGE SENSOR WHICH COULD PREVENT THE DETECTION AND CORRECTION
OF AN INVERTER/AC BUS ERROR CONDITION. LOSS OF ALL REDUNDANCY
COULD LEAD TO LOSS OF CREW/VEHICLE DUE TO LOSS OF POWER TO LOADS.

REFERENCES: 76BN22B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6086 ABORT: 3/3

ITEM: DIODE, BLOCKING 1A (TO 2 A SET)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GROUND C/O (AC BUS 2)
- 2) PRE-FLIGHT TEST BUS #2
- 3) FLCA-2
- 4) INV DIST & CONT ASSY #2
- 5) DIODE, BLOCKING 1A (TO 2 A SET)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A36A1CR1
PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS USED FOR GROUND OPERATIONS ONLY AND IS NON-CRITICAL FOR FLIGHT OPERATIONS.

REFERENCES: 76BN21G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6087 ABORT: 3/3

ITEM: DIODE, BLOCKING 1A (TO 2 A SET)
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GROUND C/O (AC BUS 2)
- 2) PRE-FLIGHT TEST BUS #2
- 3) FLCA-2
- 4) INV DIST & CONT ASSY #2
- 5) DIODE, BLOCKING 1A (TO 2 A SET)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	HDW/FUNC	CRITICALITIES	ABORT	HDW/FUNC
PRELAUNCH:	3/3		RTLS:	3/3
LIFTOFF:	3/3		TAL:	3/3
ONORBIT:	3/3		AOA:	3/3
DEORBIT:	3/3		ATO:	3/3
LANDING/SAFING:	3/3			

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A36A1CR1
PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS USED FOR GROUND OPERATIONS ONLY AND IS NON-CRITICAL FOR FLIGHT OPERATIONS.

REFERENCES: 76BN21G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6088 ABORT: 3/3

ITEM: DIODE, BLOCKING 1A (TO 2 B SET)
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GROUND C/O (AC BUS 2)
- 2) PRE-FLIGHT TEST BUS #2
- 3) FLCA-2
- 4) INV DIST & CONT ASSY #2
- 5) DIODE, BLOCKING 1A (TO 2 B SET)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A36A1CR2
PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS USED FOR GROUND OPERATIONS ONLY AND IS NON-CRITICAL FOR FLIGHT OPERATIONS.

REFERENCES: 76BN21G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6089 ABORT: 3/3

ITEM: DIODE, BLOCKING 1A (TO 2 B SET)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GROUND C/O (AC BUS 2)
- 2) PRE-FLIGHT TEST BUS #2
- 3) FLCA-2
- 4) INV DIST & CONT ASSY #2
- 5) DIODE, BLOCKING 1A (TO 2 B SET)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	HDW/FUNC	CRITICALITIES	HDW/FUNC
		ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A36A1CR2
PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS USED FOR GROUND OPERATIONS ONLY AND IS NON-CRITICAL FOR FLIGHT OPERATIONS.

REFERENCES: 76BN21G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6090 ABORT: 3/3

ITEM: DIODE, BLOCKING 1A (TO 2 C SET)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GROUND C/O (AC BUS 2)
- 2) PRE-FLIGHT TEST BUS #2
- 3) FLCA-2
- 4) INV DIST & CONT ASSY #2
- 5) DIODE, BLOCKING 1A (TO 2 C SET)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A36A1CR3
PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS USED FOR GROUND OPERATIONS ONLY AND IS NON-CRITICAL FOR FLIGHT OPERATIONS.

REFERENCES: 76BN21G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6091 ABORT: 3/3

ITEM: DIODE, BLOCKING 1A (TO 2 C SET)
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GROUND C/O (AC BUS 2)
- 2) PRE-FLIGHT TEST BUS #2
- 3) FLCA-2
- 4) INV DIST & CONT ASSY #2
- 5) DIODE, BLOCKING 1A (TO 2 C SET)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A36A1CR3
PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:
THIS DIODE IS USED FOR GROUND OPERATIONS ONLY AND IS NON-CRITICAL
FOR FLIGHT OPERATIONS.

REFERENCES: 76BN21G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6092 ABORT: 3/1R

ITEM: DIODE, BLOCKING 1A (TO 2 A RESET)
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GROUND C/O (AC BUS 2)
- 2) PRE-FLIGHT TEST BUS #2
- 3) FLCA-2
- 4) INV DIST & CONT ASSY #2
- 5) DIODE, BLOCKING 1A (TO 2 A RESET)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [3] B [F] C [P]

LOCATION: 82V76A36A1CR4
PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

IF THE AC OVER/UNDER VOLTAGE SENSOR TURNS ONE PHASE OFF, THIS FAILURE WOULD CAUSE LOSS OF THE ENTIRE AC BUS. DURING HIGH WORKLOAD PERIODS THIS MAY CAUSE LOSS OF CREW/VEHICLE BECAUSE OF LOSS OF POWER TO CRITICAL LOADS.

REFERENCES: 76BN21H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6093 ABORT: 3/3

ITEM: DIODE, BLOCKING 1A (TO 2 A RESET)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GROUND C/O (AC BUS 2)
- 2) PRE-FLIGHT TEST BUS #2
- 3) FLCA-2
- 4) INV DIST & CONT ASSY #2
- 5) DIODE, BLOCKING 1A (TO 2 A RESET)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A36A1CR4
PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS USED FOR GROUND OPERATIONS ONLY AND IS NON-CRITICAL FOR FLIGHT OPERATIONS.

REFERENCES: 76BN21H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6094 ABORT: 3/3

ITEM: DIODE, BLOCKING 1A (TO 2 B RESET)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GROUND C/O (AC BUS 2)
- 2) PRE-FLIGHT TEST BUS #2
- 3) FLCA-2
- 4) INV DIST & CONT ASSY #2
- 5) DIODE, BLOCKING 1A (TO 2 B RESET)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		
	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A36A1CR5
PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS USED FOR GROUND OPERATIONS ONLY AND IS NON-CRITICAL FOR FLIGHT OPERATIONS.

REFERENCES: 76BN21H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6095 ABORT: 3/1R

ITEM: DIODE, BLOCKING 1A (TO 2 B RESET)
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GROUND C/O (AC BUS 2)
- 2) PRE-FLIGHT TEST BUS #2
- 3) FLCA-2
- 4) INV DIST & CONT ASSY #2
- 5) DIODE, BLOCKING 1A (TO 2 B RESET)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	HDW/FUNC	CRITICALITIES	ABORT	HDW/FUNC
PRELAUNCH:	3/3		RTLS:	3/1R
LIFTOFF:	3/1R		TAL:	3/1R
ONORBIT:	3/1R		AOA:	3/1R
DEORBIT:	3/1R		ATO:	3/1R
LANDING/SAFING:	3/3			

REDUNDANCY SCREENS: A [3] B [F] C [P]

LOCATION: 82V76A36A1CR5
PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

IF THE AC OVER/UNDER VOLTAGE SENSOR TURNS ONE PHASE OFF, THIS FAILURE WOULD CAUSE LOSS OF THE ENTIRE AC BUS. DURING HIGH WORKLOAD PERIODS THIS MAY CAUSE LOSS OF CREW/VEHICLE BECAUSE OF LOSS OF POWER TO CRITICAL LOADS.

REFERENCES: 76BN21H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6096 ABORT: 3/1R

ITEM: DIODE, BLOCKING 1A (TO 2 C RESET)
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GROUND C/O (AC BUS 2)
- 2) PRE-FLIGHT TEST BUS #2
- 3) FLCA-2
- 4) INV DIST & CONT ASSY #2
- 5) DIODE, BLOCKING 1A (TO 2 C RESET)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [3] B [F] C [P]

LOCATION: 82V76A36A1CR6
PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

IF THE AC OVER/UNDER VOLTAGE SENSOR TURNS ONE PHASE OFF, THIS FAILURE WOULD CAUSE LOSS OF THE ENTIRE AC BUS. DURING HIGH WORKLOAD PERIODS THIS MAY CAUSE LOSS OF CREW/VEHICLE BECAUSE OF LOSS OF POWER TO CRITICAL LOADS.

REFERENCES: 76BN21H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6097 ABORT: 3/3

ITEM: DIODE, BLOCKING 1A (TO 2 C RESET)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GROUND C/O (AC BUS 2)
- 2) PRE-FLIGHT TEST BUS #2
- 3) FLCA-2
- 4) INV DIST & CONT ASSY #2
- 5) DIODE, BLOCKING 1A (TO 2 C RESET)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	HDW/FUNC	CRITICALITIES	HDW/FUNC
PRELAUNCH:	3/3	ABORT	
LIFTOFF:	3/3	RTLS:	3/3
ONORBIT:	3/3	TAL:	3/3
DEORBIT:	3/3	AOA:	3/3
LANDING/SAFING:	3/3	ATO:	3/3

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A36A1CR6
PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS USED FOR GROUND OPERATIONS ONLY AND IS NON-CRITICAL FOR FLIGHT OPERATIONS.

REFERENCES: 76BN21H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6098 ABORT: 3/3

ITEM: DIODE, BLOCKING 1A (TO 2 C RESET)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST & CONT ASSY #2
- 3) AC OVER/UNDER VOLT SNSR #2
- 4) DIODE, BLOCKING 1A (TO 2 C RESET)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A36A1CR7
PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF CAPABILITY TO RESET THE AFFECTED PHASE RELAY WHEN THE AC OVER/UNDER VOLTAGE SENSOR TRIPS. HOWEVER, THE CREW WILL HEAR ALARMS AND BE ABLE TO RESET THE PHASE RELAY AUTOMATICALLY.

SEVERAL MEANS OF MANUAL RESET ARE AVAILABLE INCLUDING REMOVING DC POWER FROM THE AFFECTED INVERTER. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BN15F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6099 ABORT: 3/3

ITEM: DIODE, BLOCKING 1A (TO 2 C RESET)
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST & CONT ASSY #2
- 3) AC OVER/UNDER VOLT SNSR #2
- 4) DIODE, BLOCKING 1A (TO 2 C RESET)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A36A1CR7
PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD RESULT IN LOSS OF REDUNDANT ISOLATION BETWEEN THE AC OVER/UNDER VOLT SENSOR AND THE AFFECTED PHASE RESET RELAY. THE SENSOR HAS AN INTERNAL ISOLATION DIODE AS A BACK-UP.

REFERENCES: 76BN15F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6100 ABORT: 3/3

ITEM: DIODE, BLOCKING 1A (TO 2 B RESET)
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST & CONT ASSY #2
- 3) AC OVER/UNDER VOLT SNSR #2
- 4) DIODE, BLOCKING 1A (TO 2 B RESET)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A36A1CR8
PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD RESULT IN LOSS OF REDUNDANT ISOLATION BETWEEN THE AC OVER/UNDER VOLTAGE SENSOR AND THE AFFECTED PHASE RESET RELAY. THE SENSOR HAS AN INTERNAL ISOLATION DIODE AS A BACK-UP.

REFERENCES: 76BN15F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6101 ABORT: 3/3

ITEM: DIODE, BLOCKING 1A (TO 2 B RESET)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST & CONT ASSY #2
- 3) AC OVER/UNDER VOLT SNSR #2
- 4) DIODE, BLOCKING 1A (TO 2 B RESET)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A36A1CR8
PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF CAPABILITY TO RESET THE AFFECTED PHASE RELAY WHEN THE AC OVER/UNDER VOLT SENSOR TRIPS. HOWEVER, THE CREW WILL HEAR ALARMS AND BE ABLE TO RESET THE PHASE RELAY AUTOMATICALLY. SEVERAL MEANS OF MANUAL RESET ARE AVAILABLE INCLUDING REMOVING DC POWER FROM THE AFFECTED INVERTER. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BN15F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6102 ABORT: 3/3

ITEM: DIODE, BLOCKING 1A (TO 2 A RESET)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST & CONT ASSY #2
- 3) AC OVER/UNDER VOLT SNSR #2
- 4) DIODE, BLOCKING 1A (TO 2 A RESET)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A36A1CR9
PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF CAPABILITY TO RESET THE AFFECTED PHASE RELAY WHEN THE AC OVER/UNDER VOLTAGE SENSOR TRIPS. HOWEVER, THE CREW WILL HEAR ALARMS AND BE ABLE TO RESET THE PHASE RELAY AUTOMATICALLY.

SEVERAL MEANS OF MANUAL RESET ARE AVAILABLE INCLUDING REMOVING DC POWER FROM THE AFFECTED INVERTER. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BN15F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6103 ABORT: 3/3

ITEM: DIODE, BLOCKING 1A (TO 2 A RESET)
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST & CONT ASSY #2
- 3) AC OVER/UNDER VOLT SNSR #2
- 4) DIODE, BLOCKING 1A (TO 2 A RESET)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A36A1CR9
PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD RESULT IN LOSS OF REDUNDANT ISOLATION BETWEEN THE AC OVER/UNDER VOLTAGE SENSOR AND THE AFFECTED PHASE RESET RELAY. THE SENSOR HAS AN INTERNAL ISOLATION DIODE AS A BACK-UP.

REFERENCES: 76BN15F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6104 ABORT: 3/1R

ITEM: FUSE, 3A TO AC BUS 2 A
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST CONT ASSY #2
- 3) AC O/V VOLT SNSR 2
- 4) FUSE, 3A TO AC BUS 2 A
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		
	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 82V76A36F1
PART NUMBER: ME451-0009-1003

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

IF THE AC BUS SENSOR SWITCH IS IN "AUTO", THIS FAILURE WOULD CAUSE THE LOSS OF ONE PHASE OF THE THREE PHASE AC BUS. LOSS OF ALL REDUNDANCY COULD CAUSE LOSS OF CREW/VEHICLE DUE TO LOSS OF POWER TO CRITICAL LOADS.

REFERENCES: 76BN9E

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6105 ABORT: 3/1R

ITEM: FUSE, 3A TO AC BUS 2 B
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST CONT ASSY #2
- 3) AC O/V VOLT SNSR 2
- 4) FUSE, 3A TO AC BUS 2 B
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 82V76A36F2
PART NUMBER: ME451-0009-1003

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

IF THE AC BUS SENSOR SWITCH IS IN "AUTO", THIS FAILURE WOULD CAUSE THE LOSS OF ONE PHASE OF THE THREE PHASE AC BUS. LOSS OF ALL REDUNDANCY COULD CAUSE LOSS OF CREW/VEHICLE DUE TO LOSS OF POWER TO CRITICAL LOADS.

REFERENCES: 76BN9D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6106 ABORT: 3/1R

ITEM: FUSE, 3A TO AC BUS 2 C
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST CONT ASSY #2
- 3) AC O/V VOLT SNSR 2
- 4) FUSE, 3A TO AC BUS 2 C
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 82V76A36F3
PART NUMBER: ME451-0009-1003

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

IF THE AC BUS SENSOR SWITCH IS IN "AUTO", THIS FAILURE WOULD CAUSE THE LOSS OF ONE PHASE OF THE THREE PHASE AC BUS. LOSS OF ALL REDUNDANCY COULD CAUSE LOSS OF CREW/VEHICLE DUE TO LOSS OF POWER TO CRITICAL LOADS.

REFERENCES: 76BN9B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6107 ABORT: 3/3

ITEM: FUSE, 3A TO AC VOLTMETER
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST CONT ASSY #2
- 3) FUSE, 3A TO AC VOLTMETER
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES	
FLIGHT PHASE	HDW/FUNC	ABORT
PRELAUNCH:	3/3	RTLS: 3/3
LIFTOFF:	3/3	TAL: 3/3
ONORBIT:	3/3	AOA: 3/3
DEORBIT:	3/3	ATO: 3/3
LANDING/SAFING:	3/3	

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A36F4
PART NUMBER: MC451-0009-1003

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FUSE CONNECTS TO A NON-CRITICAL MEASUREMENT CIRCUIT.
ALTERNATE MEASUREMENTS ARE AVAILABLE TO THE CREW. NO EFFECT ON
CREW/MISSION/VEHICLE.

REFERENCES: 76BN9E

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE:	3/11/87	HIGHEST CRITICALITY	HDW/FUNC
SUBSYSTEM:	EPD&C	FLIGHT:	3/3
MDAC ID:	6108	ABORT:	3/3

ITEM: FUSE, 3A TO AC VOLTMETER
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST CONT ASSY #2
- 3) FUSE, 3A TO AC VOLTMETER
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A36F5
PART NUMBER: MC451-0009-1003

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FUSE CONNECTS TO A NON-CRITICAL MEASUREMENT CIRCUIT.
ALTERNATE MEASUREMENTS ARE AVAILABLE TO THE CREW. NO EFFECT ON
CREW/MISSION/VEHICLE.

REFERENCES: 76BN9C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6109 ABORT: 3/3

ITEM: FUSE, 3A TO AC VOLTMETER
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST CONT ASSY #2
- 3) FUSE, 3A TO AC VOLTMETER
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A36F6
PART NUMBER: MC451-0009-1003

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FUSE CONNECTS TO A NON-CRITICAL MEASUREMENT CIRCUIT.
ALTERNATE MEASUREMENTS ARE AVAILABLE TO THE CREW. NO EFFECT ON
CREW/MISSION/VEHICLE.

REFERENCES: 76BN9B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6110 ABORT: 3/1R

ITEM: RELAY, LATCHING TO AC BUS 2A
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST CONT ASSY #2
- 3) RELAY, LATCHING TO AC BUS 2A
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 82V76A36K1
PART NUMBER: MC451-0122-0001(?)

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF ONE PHASE OF THE THREE PHASE
AC BUSS. REDUNDANT BUSES WOULD PROVIDE POWER TO CRITICAL LOADS.
LOSS OF ALL REDUNDANCY COULD CAUSE LOSS OF CREW/VEHICLE DUE TO
LOSS OF POWER TO CRITICAL LOADS.

REFERENCES: 76BN11

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6111 ABORT: 3/3

ITEM: RELAY, LATCHING TO AC BUS 2A
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST CONT ASSY #2
- 3) RELAY, LATCHING TO AC BUS 2A
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A36K1
PART NUMBER: MC451-0122-0001(?)

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE INABILITY TO DISCONNECT THE PHASE
FROM THE AC BUS. NO EFFECT ON CREW/VEHICLE/MISSION AS THIS RELAY
IS NORMALLY CLOSED DURING FLIGHT OPERATIONS.

REFERENCES: 76BN11

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6112 ABORT: 3/1R

ITEM: RELAY, LATCHING TO AC BUS 2B
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST CONT ASSY #2
- 3) RELAY, LATCHING TO AC BUS 2B
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 82V76A36K2
PART NUMBER: MC451-0122-0001(?)

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF ONE PHASE OF THE THREE PHASE
AC BUS. REDUNDANT BUSES WOULD PROVIDE POWER TO CRITICAL LOADS.
LOSS OF ALL REDUNDANCY COULD CAUSE LOSS OF CREW/VEHICLE DUE TO
LOSS OF POWER TO CRITICAL LOADS.

REFERENCES: 76BN11

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6113 ABORT: 3/3

ITEM: RELAY, LATCHING TO AC BUS 2B
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST CONT ASSY #2
- 3) RELAY, LATCHING TO AC BUS 2B
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A36K2
PART NUMBER: MC451-0122-0001(?)

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE INABILITY TO DISCONNECT THE PHASE
FROM THE AC BUS. NO EFFECT ON CREW/VEHICLE/MISSION AS THIS RELAY
IS NORMALLY CLOSED DURING FLIGHT OPERATIONS.

REFERENCES: 76BN11

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6114 ABORT: 3/1R

ITEM: RELAY, LATCHING TO AC BUS 2C
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST CONT ASSY #2
- 3) RELAY, LATCHING TO AC BUS 2C
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 82V76A36K3
PART NUMBER: MC451-0122-0001(?)

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF ONE PHASE OF THE THREE PHASE
AC BUS. REDUNDANT BUSES WOULD PROVIDE POWER TO CRITICAL LOADS.
LOSS OF ALL REDUNDANCY COULD CAUSE LOSS OF CREW/VEHICLE DUE TO
LOSS OF POWER TO CRITICAL LOADS.

REFERENCES: 76BN11

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6115 ABORT: 3/3

ITEM: RELAY, LATCHING TO AC BUS 2C
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST CONT ASSY #2
- 3) RELAY, LATCHING TO AC BUS 2C
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	HDW/FUNC	CRITICALITIES	ABORT	HDW/FUNC
PRELAUNCH:	3/3		RTLS:	3/3
LIFTOFF:	3/3		TAL:	3/3
ONORBIT:	3/3		AOA:	3/3
DEORBIT:	3/3		ATO:	3/3
LANDING/SAFING:	3/3			

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A36K3
PART NUMBER: MC451-0122-0001(?)

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE INABILITY TO DISCONNECT THE PHASE
FROM THE AC BUS. NO EFFECT ON CREW/VEHICLE/MISSION AS THIS RELAY
IS NORMALLY CLOSED DURING FLIGHT OPERATIONS.

REFERENCES: 76BN11

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6116 ABORT: 3/3

ITEM: RESISTOR, 5.1K 1/4W (TO MDM OF2)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST & CONT ASSY #2
- 3) AC BUS OVER/UNDER VOLTAGE SNSR
- 4) RESISTOR, 5.1K 1/4W (TO MDM OF2)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		
	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A36A1R1
PART NUMBER: RLR07C512GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS MEASUREMENT IS NOT CRITICAL TO VEHICLE OPERATION.

REFERENCES: 76BN19C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6117 ABORT: 3/3

ITEM: RESISTOR, 5.1K 1/4W (TO MDM OF2)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST & CONT ASSY #2
- 3) AC BUS OVER/UNDER VOLTAGE SNSR
- 4) RESISTOR, 5.1K 1/4W (TO MDM OF2)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A36A1R2
PART NUMBER: RLR07C512GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:
THIS MEASUREMENT IS NOT CRITICAL TO VEHICLE OPERATION.

REFERENCES: 76BN19C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6118 ABORT: 3/3

ITEM: RESISTOR, 5.1K 1/4W (TO MDM OF2)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST & CONT ASSY #2
- 3) ESS BUS 2CA
- 4) RESISTOR, 5.1K 1/4W (TO MDM OF2)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES	
	HDW/FUNC	ABORT
PRELAUNCH:	3/3	RTLS: 3/3
LIFTOFF:	3/3	TAL: 3/3
ONORBIT:	3/3	AOA: 3/3
DEORBIT:	3/3	ATO: 3/3
LANDING/SAFING:	3/3	

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A36A1R3
PART NUMBER: RLR07C512GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS MEASUREMENT IS NOT CRITICAL TO VEHICLE OPERATION.

REFERENCES: 76BN12H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6119 ABORT: 3/3

ITEM: RESISTOR, 5.1K 1/4W (TO MDM OF2)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST & CONT ASSY #2
- 3) ESS BUS 2CA
- 4) RESISTOR, 5.1K 1/4W (TO MDM OF2)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A36A1R4
PART NUMBER: RLR07C512GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:
THIS MEASUREMENT IS NOT CRITICAL TO VEHICLE OPERATION.

REFERENCES: 76BN12G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE:	3/11/87	HIGHEST CRITICALITY	HDW/FUNC
SUBSYSTEM:	EPD&C	FLIGHT:	3/3
MDAC ID:	6120	ABORT:	3/3

ITEM: RESISTOR, 5.1K 1/4W (TO MDM OF2)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST & CONT ASSY #2
- 3) ESS BUS 2CA
- 4) RESISTOR, 5.1K 1/4W (TO MDM OF2)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		
	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A36A1R5
PART NUMBER: RLR07C512GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:
THIS MEASUREMENT IS NOT CRITICAL TO VEHICLE OPERATION.

REFERENCES: 76BN12G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6121 ABORT: 3/3

ITEM: RESISTOR, 2.2K 1/4W (TO MDM OF2)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) 013 PANEL
- 3) R1A1 PANEL
- 4) INV DIST & CONT ASSY #2
- 5) RESISTOR, 2.2K 1/4W (TO MDM OF2)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A36A1R6
PART NUMBER: RLR20C222GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:
THIS IS A NON-CRITICAL MONITORING CIRCUIT.

REFERENCES: 76BN19C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE:	3/11/87	HIGHEST CRITICALITY	HDW/FUNC
SUBSYSTEM:	EPD&C	FLIGHT:	3/3
MDAC ID:	6122	ABORT:	3/3

ITEM: RESISTOR, 1.8K 1/4W (TO MDM OF2)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST CONT & ASSY #2
- 3) AC OVER/UNDER VOLT SNSR #2
- 4) RESISTOR, 1.8K 1/4W (TO MDM OF2)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES	
	HDW/FUNC	ABORT
PRELAUNCH:	3/3	RTLS: 3/3
LIFTOFF:	3/3	TAL: 3/3
ONORBIT:	3/3	AOA: 3/3
DEORBIT:	3/3	ATO: 3/3
LANDING/SAFING:	3/3	

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A36A1R7
PART NUMBER: RLR07C182GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS BLEED-OFF RESISTOR IS PART OF A MONITORING FUNCTION AND IS NOT CRITICAL FOR VEHICLE OPERATION.

REFERENCES: 76BN20C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6123 ABORT: 3/3

ITEM: RESISTOR, 1.8K 1/4W (TO MDM OF2)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST CONT & ASSY #2
- 3) AC OVER/UNDER VOLT SNSR #2
- 4) RESISTOR, 1.8K 1/4W (TO MDM OF2)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A36A1R8
PART NUMBER: RLR07C182GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS BLEED-OFF RESISTOR IS PART OF A MONITORING FUNCTION AND IS NOT CRITICAL FOR VEHICLE OPERATION.

REFERENCES: 76BN20C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6124 ABORT: 3/3

ITEM: RESISTOR, 2.2K 1/4W (TO MDM OF2)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) 013 PANEL
- 3) R1A1 PANEL
- 4) INV DIST & CONT ASSY #2
- 5) RESISTOR, 2.2K 1/4W (TO MDM OF2)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		
	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A36A1R9
PART NUMBER: RLR20C222GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A NON-CRITICAL MONITORING CIRCUIT.

REFERENCES: 76BN19C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6125 ABORT: 3/3

ITEM: RESISTOR, 100K (AC BUS 2 A CURRENT)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE PWR MONITOR
- 2) INV DIST & CONT ASSY #2
- 3) RESISTOR, 100K (AC BUS 2 A CURRENT)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC	
PRELAUNCH:	3/3	RTLS:	3/3	
LIFTOFF:	3/3	TAL:	3/3	
ONORBIT:	3/3	AOA:	3/3	
DEORBIT:	3/3	ATO:	3/3	
LANDING/SAFING:	3/3			

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A36A1R10
PART NUMBER: RLR05C1003GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A NON-CRITICAL GSE MEASUREMENT THAT IS NOT USED DURING FLIGHT.

REFERENCES: 76BN13E

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6126 ABORT: 3/3

ITEM: RESISTOR, 100K (AC BUS 2 B CURRENT)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE PWR MONITOR
- 2) INV DIST & CONT ASSY #2
- 3) RESISTOR, 100K (AC BUS 2 B CURRENT)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A36A1R11
PART NUMBER: RLR05C1003GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A NON-CRITICAL GSE MEASUREMENT THAT IS NOT USED DURING FLIGHT.

REFERENCES: 76BN13D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6127 ABORT: 3/3

ITEM: RESISTOR, 100K (AC BUS 2 C CURRENT)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE PWR MONITOR
- 2) INV DIST & CONT ASSY #2
- 3) RESISTOR, 100K (AC BUS 2 C CURRENT)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A36A1R12
PART NUMBER: RLR05C1003GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A NON-CRITICAL GSE MEASUREMENT THAT IS NOT USED DURING FLIGHT.

REFERENCES: 76BN13B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6128 ABORT: 3/3

ITEM: RESISTOR, 150K 1/2W (AC BUS 2 A VOLTAGE)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE PWR MONITOR
- 2) INV DIST & CONT ASSY #2
- 3) RESISTOR, 150K 1/2W (AC BUS 2 A VOLTAGE)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A36A1R13
PART NUMBER: RLR20C154GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A GSE MEASUREMENT THAT IS NOT CRITICAL DURING FLIGHT.

REFERENCES: 76BN10E

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6129 ABORT: 3/3

ITEM: RESISTOR, 150K 1/2W (AC BUS 2 B VOLTAGE)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE PWR MONITOR
- 2) INV DIST & CONT ASSY #2
- 3) RESISTOR, 150K 1/2W (AC BUS 2 B VOLTAGE)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A36A1R14
PART NUMBER: RLR20C154GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A GSE MEASUREMENT THAT IS NOT CRITICAL DURING FLIGHT.

REFERENCES: 76BN10D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6130 ABORT: 3/3

ITEM: RESISTOR, 150K 1/2W (AC BUS 2 C VOLTAGE)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE PWR MONITOR
- 2) INV DIST & CONT ASSY #2
- 3) RESISTOR, 150K 1/2W (AC BUS 2 C VOLTAGE)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A36A1R15
PART NUMBER: RLR20C154GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A GSE MEASUREMENT THAT IS NOT CRITICAL DURING FLIGHT.

REFERENCES: 76BN10B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6131 ABORT: 3/3

ITEM: RESISTOR, 4.3K 1/8W (AC BUS 2 A VOLTAGE)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE PWR MONITOR
- 2) INV DIST & CONT ASSY #2
- 3) RESISTOR, 4.3K 1/8W (AC BUS 2 A VOLTAGE)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A36A1R16
PART NUMBER: RLR05C432GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A GSE MEASUREMENT THAT IS NOT CRITICAL DURING FLIGHT.

REFERENCES: 76BN9A

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6132 ABORT: 3/3

ITEM: RESISTOR, 4.3K 1/8W (AC BUS 2 B VOLTAGE)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE PWR MONITOR
- 2) INV DIST & CONT ASSY #2
- 3) RESISTOR, 4.3K 1/8W (AC BUS 2 B VOLTAGE)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A36A1R17
PART NUMBER: RLR05C432GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A GSE MEASUREMENT THAT IS NOT CRITICAL DURING FLIGHT.

REFERENCES: 76BN9A

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6133 ABORT: 3/3

ITEM: RESISTOR, 4.3K 1/8W (AC BUS 2 C VOLTAGE)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE PWR MONITOR
- 2) INV DIST & CONT ASSY #2
- 3) RESISTOR, 4.3K 1/8W (AC BUS 2 C VOLTAGE)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A36A1R18
PART NUMBER: RLR05C432GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A GSE MEASUREMENT THAT IS NOT CRITICAL DURING FLIGHT.

REFERENCES: 76BN9A

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6134 ABORT: 3/1R

ITEM: AC OVER/UNDER VOLT SNSR 2
FAILURE MODE: INADVERTENT OUTPUT

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS #2
- 2) INV DIST & CONT ASSY #2
- 3) AC OVER/UNDER VOLT SNSR 2
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	HDW/FUNC	CRITICALITIES	ABORT	HDW/FUNC
PRELAUNCH:	3/3		RTLS:	3/1R
LIFTOFF:	3/1R		TAL:	3/1R
ONORBIT:	3/1R		AOA:	3/1R
DEORBIT:	3/1R		ATO:	3/1R
LANDING/SAFING:	3/3			

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 82V76A36VS1
PART NUMBER: MC431-0129-0011

CAUSES: CONTAMINATION, THERMAL SHOCK, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF ONE PHASE OF A THREE PHASE AC BUS. LOSS OF ALL AC BUSES WOULD LIKELY CAUSE LOSS OF CREW/VEHICLE.

REFERENCES: 76BN

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6135 ABORT: 3/3

ITEM: AC OVER/UNDER VOLT SNSR 2
FAILURE MODE: LOSS OF OUTPUT

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS #2
- 2) INV DIST & CONT ASSY #2
- 3) AC OVER/UNDER VOLT SNSR 2
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A36VS1
PART NUMBER: MC431-0129-0011

CAUSES: CONTAMINATION, THERMAL SHOCK, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF ONE PHASE OF A THREE PHASE AC BUS. LOSS OF ALL AC BUSES WOULD LIKELY CAUSE LOSS OF CREW/VEHICLE.

REFERENCES: 76BN

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6136 ABORT: 3/3

ITEM: CIRCUIT BREAKER, 3A 3-P
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS #2
- 2) INV DIST & CONT ASSY #2
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER, 3P 3A TO PAYLOAD
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 85V73A129CB15
PART NUMBER: MC454-0032-3030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS ITEM PROVIDES POWER AND CIRCUIT PROTECTION TO A PAYLOAD
PATCH PANEL. THIS FAILURE WOULD HAVE NO EFFECT ON
CREW/MISSION/VEHICLE.

REFERENCES: 76BP9C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6137 ABORT: 3/3

ITEM: CIRCUIT BREAKER, 3A 3-P
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS #2
- 2) INV DIST & CONT ASSY #2
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER, 3P 3A TO PAYLOAD
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		
	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 85V73A129CB15
PART NUMBER: MC454-0032-3030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS ITEM PROVIDES POWER AND CIRCUIT PROTECTION TO A PAYLOAD
PATCH PANEL. THIS FAILURE WOULD HAVE NO EFFECT ON
CREW/MISSION/VEHICLE.

REFERENCES: 76BP9C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6138 ABORT: 3/3

ITEM: CIRCUIT BREAKER AC 2A TO RCS/OMS-2
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST & CONT ASSY #2
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER AC 2A TO RCS/OMS-2
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		
	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 85V73A129CB41
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT AS THIS IS NORMAL FLIGHT
CONFIGURATION.

REFERENCES: 76BR23C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6139 ABORT: 3/1R

ITEM: CIRCUIT BREAKER AC 2A TO RCS/OMS-2
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST & CONT ASSY #2
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER AC 2A TO RCS/OMS-2
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 85V73A129CB41
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE PHASE OF THE THREE PHASE AC
RCS/OMS BUS. LOSS OF ALL REDUNDANCY WOULD CAUSE LOSS OF
CREW/VEHICLE DUE TO INABILITY TO CONTROL ISOLATION VALVES AND
MANIFOLDS DURING A CROSSFEED SITUATION WHERE THE PROP TANKS ARE
ISOLATED.

REFERENCES: 76BR23C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6140 ABORT: 3/3

ITEM: CIRCUIT BREAKER AC 2B TO RCS/OMS-2
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST & CONT ASSY #2
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER AC 2B TO RCS/OMS-2
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 85V73A129CB42
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT AS THIS IS NORMAL FLIGHT
CONFIGURATION.

REFERENCES: 76BR23C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6141 ABORT: 3/1R

ITEM: CIRCUIT BREAKER AC 2B TO RCS/OMS-2
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST & CONT ASSY #2
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER AC 2B TO RCS/OMS-2
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 85V73A129CB42
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE PHASE OF THE THREE PHASE AC
RCS/OMS BUS. LOSS OF ALL REDUNDANCY WOULD CAUSE LOSS OF
CREW/VEHICLE DUE TO INABILITY TO CONTROL ISOLATION VALVES AND
MANIFOLDS DURING A CROSSFEED SITUATION WHERE THE PROP TANKS ARE
ISOLATED.

REFERENCES: 76BR23C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6142 ABORT: 3/3

ITEM: CIRCUIT BREAKER AC 2C TO RCS/OMS-2
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST & CONT ASSY #2
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER AC 2C TO RCS/OMS-2
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		
	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 85V73A129CB43
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT AS THIS IS NORMAL FLIGHT
CONFIGURATION.

REFERENCES: 76BR24C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6143 ABORT: 3/1R

ITEM: CIRCUIT BREAKER AC 2C TO RCS/OMS-2
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST & CONT ASSY #2
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER AC 2C TO RCS/OMS-2
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 85V73A129CB43
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE PHASE OF THE THREE PHASE AC
RCS/OMS BUS. LOSS OF ALL REDUNDANCY WOULD CAUSE LOSS OF
CREW/VEHICLE DUE TO INABILITY TO CONTROL ISOLATION VALVES AND
MANIFOLDS DURING A CROSSFEED SITUATION WHERE THE PROP TANKS ARE
ISOLATED.

REFERENCES: 76BR24C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 2/1R
MDAC ID: 6144 ABORT: 2/1R

ITEM: CIRCUIT BREAKER TO FMCA-2
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST & CONT ASSY #2
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER TO FMCA-2
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	2/1R
LIFTOFF:	3/3	TAL:	2/1R
ONORBIT:	2/1R	AOA:	2/1R
DEORBIT:	2/1R	ATO:	2/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [PP]

LOCATION: 85V73A129CB5
PART NUMBER: MC454-0032-3030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE OF TWO REDUNDANT AC POWER SOURCES TO DOOR MOTORS. SECOND FAILURE WOULD LOSE ALL POWER TO THESE MOTORS. LOSS OF CREW/VEHICLE IS LIKELY DUE TO STRUCTURAL DAMAGE ON ENTRY, IF DOORS CANNOT BE OPERATED.

REFERENCES: 76BR22H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6145 ABORT: 3/3

ITEM: CIRCUIT BREAKER TO FMCA-2
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST & CONT ASSY #2
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER TO FMCA-2
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 85V73A129CB5
PART NUMBER: MC454-0032-3030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:
THIS FAILURE HAS NO EFFECT AS THIS IS THE NORMAL FLIGHT
CONFIGURATION.

REFERENCES: 76BR22H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6146 ABORT: 3/3

ITEM: CIRCUIT BREAKER TO MMCA-1
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST & CONT ASSY #2
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER TO MMCA-1
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 85V73A129CB6
PART NUMBER: MC454-0032-3030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:
THIS FAILURE HAS NO EFFECT AS THIS IS THE NORMAL FLIGHT
CONFIGURATION.

REFERENCES: 76BR22D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 2/1R
MDAC ID: 6147 ABORT: 2/1R

ITEM: CIRCUIT BREAKER TO MMCA-1
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST & CONT ASSY #2
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER TO MMCA-1
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	2/1R
LIFTOFF:	3/3	TAL:	2/1R
ONORBIT:	2/1R	AOA:	2/1R
DEORBIT:	2/1R	ATO:	2/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 85V73A129CB6
PART NUMBER: MC454-0032-3030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE OF TWO REDUNDANT AC POWER SOURCES TO DOOR MOTORS. SECOND FAILURE WOULD LOSE ALL POWER TO THESE MOTORS. LOSS OF CREW/VEHICLE IS LIKELY DUE TO STRUCTURAL DAMAGE ON ENTRY, IF DOORS CANNOT BE OPERATED. AFTER SECOND FAILURE, CREW EVA REQUIRE TO CLOSE AND LATCH PAYLOAD BAY DOORS AND LATCHES.

REFERENCES: 76BR22D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 2/1R
MDAC ID: 6148 ABORT: 2/1R

ITEM: CIRCUIT BREAKER TO MMCA-2
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST & CONT ASSY #2
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER TO MMCA-2
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	2/1R
LIFTOFF:	3/3	TAL:	2/1R
ONORBIT:	2/1R	AOA:	2/1R
DEORBIT:	2/1R	ATO:	2/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 85V73A129CB7
PART NUMBER: MC454-0032-3030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE OF TWO REDUNDANT AC POWER SOURCES TO DOOR MOTORS. SECOND FAILURE WOULD LOSE ALL POWER TO THESE MOTORS. LOSS OF CREW/VEHICLE IS LIKELY DUE TO STRUCTURAL DAMAGE ON ENTRY, IF DOORS CANNOT BE OPERATED. AFTER SECOND FAILURE, CREW EVA REQUIRE TO CLOSE AND LATCH PAYLOAD BAY DOORS AND LATCHES.

REFERENCES: 76BR22D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6149 ABORT: 3/3

ITEM: CIRCUIT BREAKER TO MMCA-2
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST & CONT ASSY #2
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER TO MMCA-2
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 85V73A129CB7
PART NUMBER: MC454-0032-3030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:
THIS FAILURE HAS NO EFFECT AS THIS IS THE NORMAL FLIGHT
CONFIGURATION.

REFERENCES: 76BR22D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6150 ABORT: 3/3

ITEM: CIRCUIT BREAKER TO MMCA-3
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST & CONT ASSY #2
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER TO MMCA-3
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		
	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 85V73A129CB8
PART NUMBER: MC454-0032-3030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE HAS NO EFFECT AS THIS IS THE NORMAL FLIGHT
CONFIGURATION.

REFERENCES: 76BR22G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 2/1R
MDAC ID: 6151 ABORT: 2/1R

ITEM: CIRCUIT BREAKER TO MMCA-3
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST & CONT ASSY #2
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER TO MMCA-3
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	2/1R
LIFTOFF:	3/3	TAL:	2/1R
ONORBIT:	2/1R	AOA:	2/1R
DEORBIT:	2/1R	ATO:	2/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 85V73A129CB8
PART NUMBER: MC454-0032-3030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE OF TWO REDUNDANT AC POWER SOURCES TO DOOR MOTORS. SECOND FAILURE WOULD LOSE ALL POWER TO THESE MOTORS. LOSS OF CREW/VEHICLE IS LIKELY DUE TO STRUCTURAL DAMAGE ON ENTRY, IF DOORS CANNOT BE OPERATED. AFTER SECOND FAILURE, CREW EVA REQUIRE TO CLOSE AND LATCH PAYLOAD BAY DOORS AND LATCHES.

REFERENCES: 76BR22G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 2/1R
MDAC ID: 6152 ABORT: 2/1R

ITEM: CIRCUIT BREAKER TO MMCA-4
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST & CONT ASSY #2
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER TO MMCA-4
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	2/1R
LIFTOFF:	3/3	TAL:	2/1R
ONORBIT:	2/1R	AOA:	2/1R
DEORBIT:	2/1R	ATO:	2/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 85V73A129CB9
PART NUMBER: MC454-0032-3030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE OF TWO REDUNDANT AC POWER SOURCES TO DOOR MOTORS. SECOND FAILURE WOULD LOSE ALL POWER TO THESE MOTORS. LOSS OF CREW/VEHICLE IS LIKELY DUE TO STRUCTURAL DAMAGE ON ENTRY, IF DOORS CANNOT BE OPERATED. AFTER SECOND FAILURE, CREW EVA REQUIRE TO CLOSE AND LATCH PAYLOAD BAY DOORS AND LATCHES.

REFERENCES: 76BR22G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6153 ABORT: 3/3

ITEM: CIRCUIT BREAKER TO MMCA-4
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST & CONT ASSY #2
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER TO MMCA-4
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 85V73A129CB9
PART NUMBER: MC454-0032-3030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE HAS NO EFFECT AS THIS IS THE NORMAL FLIGHT
CONFIGURATION.

REFERENCES: 76BR22G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6154 ABORT: 3/3

ITEM: CIRCUIT BREAKER TO AMCA-2
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST & CONT ASSY #2
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER TO AMCA-2
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		
	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 85V73A129CB10
PART NUMBER: MC454-0032-3030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE HAS NO EFFECT AS THIS IS THE NORMAL FLIGHT
CONFIGURATION.

REFERENCES: 76BR22H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 2/1R
MDAC ID: 6155 ABORT: 2/1R

ITEM: CIRCUIT BREAKER TO AMCA-2
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST & CONT ASSY #2
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER TO AMCA-2
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	2/1R
LIFTOFF:	3/3	TAL:	2/1R
ONORBIT:	2/1R	AOA:	2/1R
DEORBIT:	2/1R	ATO:	2/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 85V73A129CB10
PART NUMBER: MC454-0032-3030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE OF TWO REDUNDANT AC POWER SOURCES TO DOOR MOTORS. SECOND FAILURE WOULD LOSE ALL POWER TO THESE MOTORS. LOSS OF CREW/VEHICLE IS LIKELY DUE TO STRUCTURAL DAMAGE ON ENTRY, IF DOORS CANNOT BE OPERATED.

REFERENCES: 76BR22H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE:	3/11/87	HIGHEST CRITICALITY	HDW/FUNC
SUBSYSTEM:	EPD&C	FLIGHT:	2/1R
MDAC ID:	6156	ABORT:	2/1R

ITEM: RELAY, 4P TO PLBM-AC2
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST & CONT ASSY #2
- 3) MA73C PANEL
- 4) MMCA-3
- 5) RELAY, 4P TO PLBM-AC2
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	2/1R	AOA:	3/3
DEORBIT:	3/3	ATO:	2/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 40V76A119K65
PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE POWER SOURCE TO DUAL
REDUNDANT POWERED FUNCTIONS. SECOND FAILURE COULD MAKE THESE
FUNCTIONS (PAYLOAD BAY DOOR LATCHES) INOPERATIVE. THIS IS VERY
LIKELY TO CAUSE LOSS OF CREW/VEHICLE ON ENTRY.

REFERENCES: 76BR17F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6157 ABORT: 3/1R

ITEM: RELAY, 4P TO PLBM-AC2
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST & CONT ASSY #2
- 3) MA73C PANEL
- 4) MMCA-3
- 5) RELAY, 4P TO PLBM-AC2
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 40V76A119K65
PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD REMOVE REDUNDANT PROTECTION FROM
INADVERTENTLY POWERING A PAYLOAD BUS. SECOND FAILURE IN THE SAME
CIRCUIT WOULD SUPPLY POWER TO CERTAIN PAYLOAD LOADS. THIRD
FAILURE IN THE LOAD MAY PREMATURELY CAUSE AN ACTION THAT COULD
CAUSE LOSS CREW/VEHICLE.

REFERENCES: 76BR17F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6158 ABORT: 3/1R

ITEM: RELAY, 4P TO PLBM-AC2
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST & CONT ASSY #2
- 3) MA73C PANEL
- 4) MMCA-3
- 5) RELAY, 4P TO PLBM-AC2
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 40V76A119K77
PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD REMOVE REDUNDANT PROTECTION FROM
INADVERTENTLY POWERING A PAYLOAD BUS. SECOND FAILURE IN THE SAME
CIRCUIT WOULD SUPPLY POWER TO CERTAIN PAYLOAD LOADS. THIRD
FAILURE IN THE LOAD MAY PREMATURELY CAUSE AN ACTION THAT COULD
CAUSE LOSS CREW/VEHICLE.

REFERENCES: 76BR17F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 2/1R
MDAC ID: 6159 ABORT: 2/1R

ITEM: RELAY, 4P TO PLBM-AC2
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST & CONT ASSY #2
- 3) MA73C PANEL
- 4) MMCA-3
- 5) RELAY, 4P TO PLBM-AC2
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	2/1R	AOA:	3/3
DEORBIT:	3/3	ATO:	2/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 40V76A119K77
PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE POWER SOURCE TO DUAL
REDUNDANT POWERED FUNCTIONS. SECOND FAILURE COULD MAKE THESE
FUNCTIONS (PAYLOAD BAY DOOR LATCHES) INOPERATIVE. THIS IS VERY
LIKELY TO CAUSE LOSS OF CREW/VEHICLE ON ENTRY.

REFERENCES: 76BR17F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6160

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 2/1R
ABORT: 2/1R

ITEM: RELAY TO PLBD AC2
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER

SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST & CONT ASSY #2
- 3) MA73C PANEL
- 4) MMCA-2
- 5) RELAY TO PLBD AC2
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	2/1R	AOA:	3/3
DEORBIT:	3/3	ATO:	2/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 40V76A118K37
PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT AC POWER TO THE
PAYLOAD BAY DOOR MOTORS. SECOND FAILURE IN THE REDUNDANT POWER
SOURCE WOULD PREVENT CLOSING THE PAYLOAD BAY DOORS PRIOR TO
ENTRY.

REFERENCES: 76BR17D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6161 ABORT: 3/1R

ITEM: RELAY TO PLBD AC2
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST & CONT ASSY #2
- 3) MA73C PANEL
- 4) MMCA-2
- 5) RELAY TO PLBD AC2
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 40V76A118K37
PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANCY TO PREVENT PREMATURE
POWER TO THE P/L BAY DOORS. IF POWER WERE APPLIED PREMATURELY
(MULTIPLE FAILURES), THE CREW/VEHICLE COULD BE LOST DUE TO
PREMATURE OPENING OR CLOSING THE P/L BAY DOORS.

REFERENCES: 76BR17D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6162 ABORT: 3/1R

ITEM: RELAY TO PLBD AC2
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST & CONT ASSY #2
- 3) MA73C PANEL
- 4) MMCA-2
- 5) RELAY TO PLBD AC2
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 40V76A118K39
PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANCY TO PREVENT PREMATURE
POWER TO THE P/L BAY DOORS. IF POWER WERE APPLIED PREMATURELY
(MULTIPLE FAILURES), THE CREW/VEHICLE COULD BE LOST DUE TO
PREMATURE OPENING OR CLOSING THE P/L BAY DOORS.

REFERENCES: 76BR17C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 2/1R
MDAC ID: 6163 ABORT: 2/1R

ITEM: RELAY TO PLBD AC2
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST & CONT ASSY #2
- 3) MA73C PANEL
- 4) MMCA-2
- 5) RELAY TO PLBD AC2
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	2/1R	AOA:	3/3
DEORBIT:	3/3	ATO:	2/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 40V76A118K39
PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT AC POWER TO THE
PAYLOAD BAY DOOR MOTORS. SECOND FAILURE IN THE REDUNDANT POWER
SOURCE WOULD PREVENT CLOSING THE PAYLOAD BAY DOORS PRIOR TO
ENTRY.

REFERENCES: 76BR17C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 2/1R
MDAC ID: 6164 ABORT: 2/1R

ITEM: RELAY, 4P TO PLBM-AC2
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST & CONT ASSY #2
- 3) MA73C PANEL
- 4) MMCA-2
- 5) RELAY, 4P TO PLBM-AC2
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	2/1R	AOA:	3/3
DEORBIT:	3/3	ATO:	2/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 40V76A118K56
PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE POWER SOURCE TO DUAL
REDUNDANT POWERED FUNCTIONS. SECOND FAILURE COULD MAKE THESE
FUNCTIONS (PAYLOAD BAY DOOR LATCHES) INOPERATIVE. THIS IS VERY
LIKELY TO CAUSE LOSS OF CREW/VEHICLE ON ENTRY.

REFERENCES: 76BR16C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6165 ABORT: 3/1R

ITEM: RELAY, 4P TO PLBM-AC2
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST & CONT ASSY #2
- 3) MA73C PANEL
- 4) MMCA-2
- 5) RELAY, 4P TO PLBM-AC2
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 40V76A118K56
PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD REMOVE REDUNDANT PROTECTION FROM
INADVERTENTLY POWERING A PAYLOAD BUS. SECOND FAILURE IN THE SAME
CIRCUIT WOULD SUPPLY POWER TO CERTAIN PAYLOAD LOADS. THIRD
FAILURE IN THE LOAD MAY PREMATURELY CAUSE AN ACTION THAT COULD
CAUSE LOSS CREW/VEHICLE.

REFERENCES: 76BR16C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6166 ABORT: 3/1R

ITEM: RELAY, 4P TO PLBM-AC2
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST & CONT ASSY #2
- 3) MA73C PANEL
- 4) MMCA-2
- 5) RELAY, 4P TO PLBM-AC2
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 40V76A118K58
PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD REMOVE REDUNDANT PROTECTION FROM
INADVERTENTLY POWERING A PAYLOAD BUS. SECOND FAILURE IN THE SAME
CIRCUIT WOULD SUPPLY POWER TO CERTAIN PAYLOAD LOADS. THIRD
FAILURE IN THE LOAD MAY PREMATURELY CAUSE AN ACTION THAT COULD
CAUSE LOSS CREW/VEHICLE.

REFERENCES: 76BR16D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 2/1R
MDAC ID: 6167 ABORT: 2/1R

ITEM: RELAY, 4P TO PLBM-AC2
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST & CONT ASSY #2
- 3) MA73C PANEL
- 4) MMCA-2
- 5) RELAY, 4P TO PLBM-AC2
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	2/1R	AOA:	3/3
DEORBIT:	3/3	ATO:	2/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 40V76A118K58
PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE POWER SOURCE TO DUAL
REDUNDANT POWERED FUNCTIONS. SECOND FAILURE COULD MAKE THESE
FUNCTIONS (PAYLOAD BAY DOOR LATCHES) INOPERATIVE. THIS IS VERY
LIKELY TO CAUSE LOSS OF CREW/VEHICLE ON ENTRY.

REFERENCES: 76BR16D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 2/1R
MDAC ID: 6168 ABORT: 2/1R

ITEM: RELAY TO PLBD AC2
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST & CONT ASSY #2
- 3) MA73C PANEL
- 4) MMCA-4
- 5) RELAY TO PLBD AC2
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	2/1R	AOA:	3/3
DEORBIT:	3/3	ATO:	2/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 40V76A120K29
PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT AC POWER TO THE
PAYLOAD BAY DOOR MOTORS. SECOND FAILURE IN THE REDUNDANT POWER
SOURCE WOULD PREVENT CLOSING THE PAYLOAD BAY DOORS PRIOR TO
ENTRY.

REFERENCES: 76BR9C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6169 ABORT: 3/1R

ITEM: RELAY TO PLBD AC2
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST & CONT ASSY #2
- 3) MA73C PANEL
- 4) MMCA-4
- 5) RELAY TO PLBD AC2
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 40V76A120K29
PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANCY TO PREVENT PREMATURE
POWER TO THE P/L BAY DOORS. IF POWER WERE APPLIED PREMATURELY
(MULTIPLE FAILURES), THE CREW/VEHICLE COULD BE LOST DUE TO
PREMATURE OPENING OR CLOSING THE P/L BAY DOORS.

REFERENCES: 76BR9C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6170 ABORT: 3/1R

ITEM: RELAY TO PLBD AC2
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST & CONT ASSY #2
- 3) MA73C PANEL
- 4) MMCA-4
- 5) RELAY TO PLBD AC2
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 40V76A120K41
PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANCY TO PREVENT PREMATURE
POWER TO THE P/L BAY DOORS. IF POWER WERE APPLIED PREMATURELY
(MULTIPLE FAILURES), THE CREW/VEHICLE COULD BE LOST DUE TO
PREMATURE OPENING OR CLOSING THE P/L BAY DOORS.

REFERENCES: 76BR9C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 2/1R
MDAC ID: 6171 ABORT: 2/1R

ITEM: RELAY TO PLBD AC2
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST & CONT ASSY #2
- 3) MA73C PANEL
- 4) MMCA-4
- 5) RELAY TO PLBD AC2
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	2/1R	AOA:	3/3
DEORBIT:	3/3	ATO:	2/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 40V76A120K41
PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT AC POWER TO THE
PAYLOAD BAY DOOR MOTORS. SECOND FAILURE IN THE REDUNDANT POWER
SOURCE WOULD PREVENT CLOSING THE PAYLOAD BAY DOORS PRIOR TO
ENTRY.

REFERENCES: 76BR9C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 2/1R
MDAC ID: 6172 ABORT: 2/1R

ITEM: RELAY, 4P TO PLBM-AC2
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST & CONT ASSY #2
- 3) MA73C PANEL
- 4) MMCA-4
- 5) RELAY, 4P TO PLBM-AC2
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	2/1R	AOA:	3/3
DEORBIT:	3/3	ATO:	2/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 40V76A120K49
PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE POWER SOURCE TO DUAL
REDUNDANT POWERED FUNCTIONS. SECOND FAILURE COULD MAKE THESE
FUNCTIONS (PAYLOAD BAY DOOR LATCHES) INOPERATIVE. THIS IS VERY
LIKELY TO CAUSE LOSS OF CREW/VEHICLE ON ENTRY.

REFERENCES: 76BR8D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6173 ABORT: 3/1R

ITEM: RELAY, 4P TO PLBM-AC2
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST & CONT ASSY #2
- 3) MA73C PANEL
- 4) MMCA-4
- 5) RELAY, 4P TO PLBM-AC2
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 40V76A120K49
PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD REMOVE REDUNDANT PROTECTION FROM
INADVERTENTLY POWERING A PAYLOAD BUS. SECOND FAILURE IN THE SAME
CIRCUIT WOULD SUPPLY POWER TO CERTAIN PAYLOAD LOADS. THIRD
FAILURE IN THE LOAD MAY PREMATURELY CAUSE AN ACTION THAT COULD
CAUSE LOSS CREW/VEHICLE.

REFERENCES: 76BR8D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6174

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/1R
ABORT: 3/1R

ITEM: RELAY, 4P TO PLBM-AC2
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER

SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST & CONT ASSY #2
- 3) MA73C PANEL
- 4) MMCA-4
- 5) RELAY, 4P TO PLBM-AC2
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 40V76A120K61
PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD REMOVE REDUNDANT PROTECTION FROM
INADVERTENTLY POWERING A PAYLOAD BUS. SECOND FAILURE IN THE SAME
CIRCUIT WOULD SUPPLY POWER TO CERTAIN PAYLOAD LOADS. THIRD
FAILURE IN THE LOAD MAY PREMATURELY CAUSE AN ACTION THAT COULD
CAUSE LOSS CREW/VEHICLE.

REFERENCES: 76BR8C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 2/1R
MDAC ID: 6175 ABORT: 2/1R

ITEM: RELAY, 4P TO PLBM-AC2
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 2
- 2) INV DIST & CONT ASSY #2
- 3) MA73C PANEL
- 4) MMCA-4
- 5) RELAY, 4P TO PLBM-AC2
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	2/1R	AOA:	3/3
DEORBIT:	3/3	ATO:	2/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 40V76A120K61
PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE POWER SOURCE TO DUAL
REDUNDANT POWERED FUNCTIONS. SECOND FAILURE COULD MAKE THESE
FUNCTIONS (PAYLOAD BAY DOOR LATCHES) INOPERATIVE. THIS IS VERY
LIKELY TO CAUSE LOSS OF CREW/VEHICLE ON ENTRY.

REFERENCES: 76BR8C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6176 ABORT: 3/1R

ITEM: CIRCUIT BREAKER, 3A (AC CONT 3 A)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) R1A1 PANEL
- 3) CIRCUIT BREAKER, 3A (AC CONT 3 A)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 32V73A1A1CB7
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF CONTROL POWER TO ONE INVERTER (ONE AC PHASE OF ONE AC BUS). SINCE THE INVERTERS ARE STARTED ON THE GROUND AND HAVE LATCHED POWER INPUTS, THIS FAILURE WOULD HAVE NO EFFECT ONCE THE INVERTERS WERE STARTED. HOWEVER, IF THIS FAILURE OCCURED AFTER A PHASE HAD TRIPPED OUT, THE PHASE COULD NOT BE RE-ENERGIZED. LOSS OF ALL CAPABILITY TO RE-POWER THE AC BUSES COULD RESULT IN LOSS OF CREW/VEHICLE.

REFERENCES: 76BU24H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6177 ABORT: 3/3

ITEM: CIRCUIT BREAKER, 3A (AC CONT 3 A)
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) R1A1 PANEL
- 3) CIRCUIT BREAKER, 3A (AC CONT 3 A)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 32V73A1A1CB7
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS CB IS CLOSED DURING NORMAL OPERATIONS AND THE CREW MAY SWITCH OUT THIS CIRCUIT WITH A TOGGLE SWITCH IN CASE OF AN OVERLOAD WHICH WOULD RESULT IN THE LOSS OF ONE PHASE OF THE AC BUS. SINCE MOST AC MOTORS CAN OPERATE ON TWO PHASES, THIS FAILURE PLUS AN OVERLOAD CONDITION WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BU24H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6178 ABORT: 3/3

ITEM: CIRCUIT BREAKER, 3A (AC CONT 3 B)
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) R1A1 PANEL
- 3) CIRCUIT BREAKER, 3A (AC CONT 3 B)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 32V73A1A1CB8
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS CB IS CLOSED DURING NORMAL OPERATIONS AND THE CREW MAY SWITCH OUT THIS CIRCUIT WITH A TOGGLE SWITCH IN CASE OF AN OVERLOAD WHICH WOULD RESULT IN THE LOSS OF ONE PHASE OF THE AC BUS. SINCE MOST AC MOTORS CAN OPERATE ON TWO PHASES, THIS FAILURE PLUS AN OVERLOAD CONDITION WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BU24D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6179 ABORT: 3/1R

ITEM: CIRCUIT BREAKER, 3A (AC CONT 3 B)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) R1A1 PANEL
- 3) CIRCUIT BREAKER, 3A (AC CONT 3 B)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 32V73A1A1CB8
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF CONTROL POWER TO ONE INVERTER (ONE AC PHASE OF ONE AC BUS). SINCE THE INVERTERS ARE STARTED ON THE GROUND AND HAVE LATCHED POWER INPUTS, THIS FAILURE WOULD HAVE NO EFFECT ONCE THE INVERTERS WERE STARTED. HOWEVER, IF THIS FAILURE OCCURED AFTER A PHASE HAD TRIPPED OUT, THE PHASE COULD NOT BE RE-ENERGIZED. LOSS OF ALL CAPABILITY TO RE-POWER THE AC BUSES COULD RESULT IN LOSS OF CREW/VEHICLE.

REFERENCES: 76BU24D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6180 ABORT: 3/1R

ITEM: CIRCUIT BREAKER, 3A (AC CONT 3 C)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) R1A1 PANEL
- 3) CIRCUIT BREAKER, 3A (AC CONT 3 C)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 32V73A1A1CB9
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF CONTROL POWER TO ONE INVERTER (ONE AC PHASE OF ONE AC BUS). SINCE THE INVERTERS ARE STARTED ON THE GROUND AND HAVE LATCHED POWER INPUTS, THIS FAILURE WOULD HAVE NO EFFECT ONCE THE INVERTERS WERE STARTED. HOWEVER, IF THIS FAILURE OCCURED AFTER A PHASE HAD TRIPPED OUT, THE PHASE COULD NOT BE RE-ENERGIZED. LOSS OF ALL CAPABILITY TO RE-POWER THE AC BUSES COULD RESULT IN LOSS OF CREW/VEHICLE.

REFERENCES: 76BU24C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6181 ABORT: 3/3

ITEM: CIRCUIT BREAKER, 3A (AC CONT 3 C)
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) R1A1 PANEL
- 3) CIRCUIT BREAKER, 3A (AC CONT 3 C)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 32V73A1A1CB9
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS CB IS CLOSED DURING NORMAL OPERATIONS AND THE CREW MAY SWITCH OUT THIS CIRCUIT WITH A TOGGLE SWITCH IN CASE OF AN OVERLOAD WHICH WOULD RESULT IN THE LOSS OF ONE PHASE OF THE AC BUS. SINCE MOST AC MOTORS CAN OPERATE ON TWO PHASES, THIS FAILURE PLUS AN OVERLOAD CONDITION WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BU24C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6182 ABORT: 3/1R

ITEM: SWITCH, TOGGLE 3PDT (INVERTER PWR #3)
FAILURE MODE: INADVERTENT TRANSFER

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) R1A1 PANEL
- 3) MAIN DC DIST ASSY #3
- 4) SWITCH, TOGGLE 3PDT (INVERTER PWR #3)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 32V73A1A1S18
PART NUMBER: ME452-0102-7305

CAUSES: PIECE PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK,
CONTAMINATION

EFFECTS/RATIONALE:

IF THIS FAILURE OCCURS TO THE "OFF" SIDE OF THE SWITCH, AT LEAST ONE INVERTER WILL BE SHUT DOWN AND COULD NOT BE RESTARTED. LOSS OF ALL REDUNDANCY MAY CAUSE LOSS OF CREW/VEHICLE DUE TO LOSS OF POWER TO CRITICAL LOADS.

REFERENCES: 76BU24

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6183 ABORT: 3/3

ITEM: SWITCH, TOGGLE 3PDT (INVERTER PWR #3)
FAILURE MODE: FAILS TO TRANSFER

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) R1A1 PANEL
- 3) MAIN DC DIST ASSY #3
- 4) SWITCH, TOGGLE 3PDT (INVERTER PWR #3)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 32V73A1A1S18
PART NUMBER: ME452-0102-7305

CAUSES: PIECE PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK,
CONTAMINATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT DURING NORMAL FLIGHT OPERATIONS
AS THE AC INVERTERS ARE LATCHED ON DURING PRE-LAUNCH. ALTERNATE
MEANS OF REMOVING A PHASE FROM THE AC BUS EXIST.

REFERENCES: 76BU24

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6184 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE I (MN C TO INV 3 ON)
FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) ESS BUS 3AB
- 3) FLCA-3
- 4) HYBRID DRIVER TYPE I (MN C TO INV 3 ON)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A18AR4
PART NUMBER: MC477-0261-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,
PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS ITEM IS USED FOR GROUND C/O ONLY AND IS NON-CRITICAL FOR
FLIGHT OPERATIONS.

REFERENCES: 76BU18F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6185 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE I (MN C TO INV 3 ON)
FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) ESS BUS 3AB
- 3) FLCA-3
- 4) HYBRID DRIVER TYPE I (MN C TO INV 3 ON)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A18AR4
PART NUMBER: MC477-0261-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,
PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS ITEM IS USED FOR GROUND C/O ONLY AND IS NON-CRITICAL FOR
FLIGHT OPERATIONS.

REFERENCES: 76BU18F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6186 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE I (MN C TO INV 3 OFF)
FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) PRE-FLIGHT TEST BUS #2
- 3) FLCA-3
- 4) HYBRID DRIVER TYPE I (MN C TO INV 3 OFF)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A18AR5
PART NUMBER: MC477-0261-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,
PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS ITEM IS USED FOR GROUND C/O ONLY AND IS NON-CRITICAL FOR
FLIGHT OPERATIONS.

REFERENCES: 76BU18G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6187 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE I (MN C TO INV 3 OFF)
FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) PRE-FLIGHT TEST BUS #2
- 3) FLCA-3
- 4) HYBRID DRIVER TYPE I (MN C TO INV 3 OFF)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A18AR5
PART NUMBER: MC477-0261-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,
PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS ITEM IS USED FOR GROUND C/O ONLY AND IS NON-CRITICAL FOR
FLIGHT OPERATIONS.

REFERENCES: 76BU18G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6188 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE II (INV 3 A ON)
FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) FLCA-3
- 3) HYBRID DRIVER TYPE II (INV 3 A ON)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A18AR11
PART NUMBER: MC477-0262-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,
PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE LOSS OF INVERTER CONTROL INPUT SUCH THAT THE INVERTER COULD NOT BE TURNED OFF. NORMAL FLIGHT PROCEDURE IS TO LEAVE INVERTER RUNNING AND DISCONNECT ITS OUTPUT IF REQUIRED. NO EFFECT ON CREW/VEHICLE/MISSION.

REFERENCES: 76BU17G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6189 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE II (INV 3 A ON)
FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) FLCA-3
- 3) HYBRID DRIVER TYPE II (INV 3 A ON)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A18AR11
PART NUMBER: MC477-0262-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,
PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF FULL INPUT POWER TO THE INVERTER (7.5A STILL AVAILABLE), CAUSING A LOW POWER PHASE ON ONE AC BUS. SINCE THE INVERTERS ARE STARTED ON THE GROUND AND LATCHED ON, THIS FAILURE WOULD HAVE NO EFFECT DURING NORMAL FLIGHT.

THIS FAILURE WOULD NOT BE DETECTABLE UNLESS AN INVERTER IS POWERED DOWN AND A RESTART IS ATTEMPTED. THIS IS AN OFF-NOMINAL PROCEDURE.

REFERENCES: 76BU17G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6190 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE II (INV 3 B ON)
FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) FLCA-3
- 3) HYBRID DRIVER TYPE II (INV 3 B ON)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A18AR12
PART NUMBER: MC477-0262-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,
PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF FULL INPUT POWER TO THE INVERTER (7.5A STILL AVAILABLE), CAUSING A LOW POWER PHASE ON ONE AC BUS. SINCE THE INVERTERS ARE STARTED ON THE GROUND AND LATCHED ON, THIS FAILURE WOULD HAVE NO EFFECT DURING NORMAL FLIGHT.

THIS FAILURE WOULD NOT BE DETECTABLE UNLESS AN INVERTER IS POWERED DOWN AND A RESTART IS ATTEMPTED. THIS IS AN OFF-NOMINAL PROCEDURE.

REFERENCES: 76BU17D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6191 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE II (INV 3 B ON)
FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) FLCA-3
- 3) HYBRID DRIVER TYPE II (INV 3 B ON)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A18AR12
PART NUMBER: MC477-0262-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,
PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE LOSS OF INVERTER CONTROL INPUT SUCH THAT
THE INVERTER COULD NOT BE TURNED OFF. NORMAL FLIGHT PROCEDURE IS
TO LEAVE INVERTER RUNNING AND DISCONNECT ITS OUTPUT IF REQUIRED.
NO EFFECT ON CREW/VEHICLE/MISSION.

REFERENCES: 76BU17D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6192 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE II (INV 3 C ON)
FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) FLCA-3
- 3) HYBRID DRIVER TYPE II (INV 3 C ON)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A18AR13
PART NUMBER: MC477-0262-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,
PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE LOSS OF INVERTER CONTROL INPUT SUCH THAT
THE INVERTER COULD NOT BE TURNED OFF. NORMAL FLIGHT PROCEDURE IS
TO LEAVE INVERTER RUNNING AND DISCONNECT ITS OUTPUT IF REQUIRED.
NO EFFECT ON CREW/VEHICLE/MISSION.

REFERENCES: 76BU17B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6193 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE II (INV 3 C ON)
FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) FLCA-3
- 3) HYBRID DRIVER TYPE II (INV 3 C ON)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A18AR13
PART NUMBER: MC477-0262-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,
PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF FULL INPUT POWER TO THE INVERTER (7.5A STILL AVAILABLE), CAUSING A LOW POWER PHASE ON ONE AC BUS. SINCE THE INVERTERS ARE STARTED ON THE GROUND AND LATCHED ON, THIS FAILURE WOULD HAVE NO EFFECT DURING NORMAL FLIGHT.

THIS FAILURE WOULD NOT BE DETECTABLE UNLESS AN INVERTER IS POWERED DOWN AND A RESTART IS ATTEMPTED. THIS IS AN OFF-NOMINAL PROCEDURE.

REFERENCES: 76BU17B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6194 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE III (INV 3 A ON)
FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) FLCA-3
- 3) HYBRID DRIVER TYPE III (INV 3 A ON)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A18AR14
PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,
PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF FULL POWER TO AN AC INVERTER (7.5A STILL AVAILABLE). WORST CASE IS THE LOSS OF ONE INVERTER BECAUSE IT COULD NOT BE RESTARTED WITH FULL POWER. INVERTERS ARE STARTED ON THE GROUND AND NORMALLY KEPT ON DURING A FLIGHT.

REFERENCES: 76BU16G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6195 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE III (INV 3 A ON)
FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) FLCA-3
- 3) HYBRID DRIVER TYPE III (INV 3 A ON)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A18AR14
PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,
PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF INPUT POWER CONTROL TO THE
INVERTER. NO EFFECT SINCE INVERTERS ARE STARTED ON THE GROUND
AND KEPT ON DURING A FLIGHT.

REFERENCES: 76BU16G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6196 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE III (INV 3 B ON)
FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) FLCA-3
- 3) HYBRID DRIVER TYPE III (INV 3 B ON)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A18AR15
PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,
PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF INPUT POWER CONTROL TO THE
INVERTER. NO EFFECT SINCE INVERTERS ARE STARTED ON THE GROUND
AND KEPT ON DURING A FLIGHT.

REFERENCES: 76BU16D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6197 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE III (INV 3 B ON)
FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) FLCA-3
- 3) HYBRID DRIVER TYPE III (INV 3 B ON)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A18AR15
PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,
PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF FULL POWER TO AN AC INVERTER (7.5A STILL AVAILABLE). WORST CASE IS THE LOSS OF ONE INVERTER BECAUSE IT COULD NOT BE RESTARTED WITH FULL POWER. INVERTERS ARE STARTED ON THE GROUND AND NORMALLY KEPT ON DURING A FLIGHT.

REFERENCES: 76BU16D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6198 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE III (INV 3 C ON)
FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) FLCA-3
- 3) HYBRID DRIVER TYPE III (INV 3 C ON)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A18AR16
PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,
PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF FULL POWER TO AN AC INVERTER (7.5A STILL AVAILABLE). WORST CASE IS THE LOSS OF ONE INVERTER BECAUSE IT COULD NOT BE RESTARTED WITH FULL POWER. INVERTERS ARE STARTED ON THE GROUND AND NORMALLY KEPT ON DURING A FLIGHT.

REFERENCES: 76BU16B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6199 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE III (INV 3 C ON)
FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) FLCA-3
- 3) HYBRID DRIVER TYPE III (INV 3 C ON)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A18AR16
PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,
PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF INPUT POWER CONTROL TO THE
INVERTER. NO EFFECT SINCE INVERTERS ARE STARTED ON THE GROUND
AND KEPT ON DURING A FLIGHT.

REFERENCES: 76BU16B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6200 ABORT: 3/1R

ITEM: HYBRID DRIVER TYPE III (INV 3 A OFF)
FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) FLCA-3
- 3) HYBRID DRIVER TYPE III (INV 3 A OFF)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 83V76A18AR17
PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,
PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD ENERGIZE THE "OFF" RELAY TO THE INVERTER
RESULTING IN THE LOSS OF ONE PHASE OF A THREE PHASE AC BUS. LOSS
OF ALL AC POWER COULD CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY
TO POWER CRITICAL LOADS.

REFERENCES: 76BU16H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6201 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE III (INV 3 A OFF)
FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) FLCA-3
- 3) HYBRID DRIVER TYPE III (INV 3 A OFF)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A18AR17
PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,
PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF ABILITY TO TURN THE INVERTER OFF. NO EFFECT ON CREW/MISSION/VEHICLE SINCE THE INVERTER OUTPUT CAN BE DISCONNECTED FROM ITS LOADS. INVERTERS ARE STARTED ON THE GROUND AND KEPT ON DURING A FLIGHT.

REFERENCES: 76BU16H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6202 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE III (INV 3 B OFF)
FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) FLCA-3
- 3) HYBRID DRIVER TYPE III (INV 3 B OFF)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		
	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A18AR18
PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,
PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF ABILITY TO TURN THE INVERTER OFF. NO EFFECT ON CREW/MISSION/VEHICLE SINCE THE INVERTER OUTPUT CAN BE DISCONNECTED FROM ITS LOADS. INVERTERS ARE STARTED ON THE GROUND AND KEPT ON DURING A FLIGHT.

REFERENCES: 76BU16E

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6203 ABORT: 3/1R

ITEM: HYBRID DRIVER TYPE III (INV 3 B OFF)
FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) FLCA-3
- 3) HYBRID DRIVER TYPE III (INV 3 B OFF)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 83V76A18AR18
PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,
PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD ENERGIZE THE "OFF" RELAY TO THE INVERTER
RESULTING IN THE LOSS OF ONE PHASE OF A THREE PHASE AC BUS. LOSS
OF ALL AC POWER COULD CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY
TO POWER CRITICAL LOADS.

REFERENCES: 76BU16E

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6204 ABORT: 3/1R

ITEM: HYBRID DRIVER TYPE III (INV 3 C OFF)
FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) FLCA-3
- 3) HYBRID DRIVER TYPE III (INV 3 C OFF)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 83V76A18AR19
PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,
PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD ENERGIZE THE "OFF" RELAY TO THE INVERTER
RESULTING IN THE LOSS OF ONE PHASE OF A THREE PHASE AC BUS. LOSS
OF ALL AC POWER COULD CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY
TO POWER CRITICAL LOADS.

REFERENCES: 76BU16C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6205 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE III (INV 3 C OFF)
FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) FLCA-3
- 3) HYBRID DRIVER TYPE III (INV 3 C OFF)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A18AR19
PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,
PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF ABILITY TO TURN THE INVERTER OFF. NO EFFECT ON CREW/MISSION/VEHICLE SINCE THE INVERTER OUTPUT CAN BE DISCONNECTED FROM ITS LOADS. INVERTERS ARE STARTED ON THE GROUND AND KEPT ON DURING A FLIGHT.

REFERENCES: 76BU16C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6206 ABORT: 3/3

ITEM: FUSE, 3A TO AC BUS 3C OFF
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) FLCA-3
- 3) FUSE, 3A TO AC BUS 3C OFF
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		
	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A18F5
PART NUMBER: ME451-0010-1030

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE WOULD PREVENT THE CREW FROM CHANGING THE STATE OF THE LATCHING RELAY FOR ONE PHASE OF AN AC BUS. SINCE THE INVERTERS ARE STARTED ON THE GROUND AND LATCHED ON FOR THE DURATION OF THE FLIGHT, THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE. ALTERNATE MEANS OF REMOVING POWER FROM AN INVERTER EXIST IF IT WERE NECESSARY TO DO SO.

REFERENCES: 76BU16C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6207 ABORT: 3/3

ITEM: FUSE, 3A TO AC BUS 3B OFF
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) FLCA-3
- 3) FUSE, 3A TO AC BUS 3B OFF
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A18F6
PART NUMBER: ME451-0010-1030

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE WOULD PREVENT THE CREW FROM CHANGING THE STATE OF THE LATCHING RELAY FOR ONE PHASE OF AN AC BUS. SINCE THE INVERTERS ARE STARTED ON THE GROUND AND LATCHED ON FOR THE DURATION OF THE FLIGHT, THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE. ALTERNATE MEANS OF REMOVING POWER FROM AN INVERTER EXIST IF IT WERE NECESSARY TO DO SO.

REFERENCES: 76BU16E

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6208 ABORT: 3/3

ITEM: FUSE, 3A TO AC BUS 3A OFF
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) FLCA-3
- 3) FUSE, 3A TO AC BUS 3A OFF
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A18F7
PART NUMBER: ME451-0010-1030

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE WOULD PREVENT THE CREW FROM CHANGING THE STATE OF THE LATCHING RELAY FOR ONE PHASE OF AN AC BUS. SINCE THE INVERTERS ARE STARTED ON THE GROUND AND LATCHED ON FOR THE DURATION OF THE FLIGHT, THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE. ALTERNATE MEANS OF REMOVING POWER FROM AN INVERTER EXIST IF IT WERE NECESSARY TO DO SO.

REFERENCES: 76BU16H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6209 ABORT: 3/3

ITEM: FUSE, 3A TO AC BUS 3C ON
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) FLCA-3
- 3) FUSE, 3A TO AC BUS 3C ON
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A18F8
PART NUMBER: ME451-0010-1030

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE WOULD PREVENT THE CREW FROM CHANGING THE STATE OF THE LATCHING RELAY FOR ONE PHASE OF AN AC BUS. SINCE THE INVERTERS ARE STARTED ON THE GROUND AND LATCHED ON FOR THE DURATION OF THE FLIGHT, THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE. ALTERNATE MEANS OF REMOVING POWER FROM AN INVERTER EXIST IF IT WERE NECESSARY TO DO SO.

REFERENCES: 76BU16B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6210 ABORT: 3/3

ITEM: FUSE, 3A TO AC BUS 3B ON
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) FLCA-3
- 3) FUSE, 3A TO AC BUS 3B ON
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A18F9
PART NUMBER: ME451-0010-1030

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE WOULD PREVENT THE CREW FROM CHANGING THE STATE OF THE LATCHING RELAY FOR ONE PHASE OF AN AC BUS. SINCE THE INVERTERS ARE STARTED ON THE GROUND AND LATCHED ON FOR THE DURATION OF THE FLIGHT, THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE. ALTERNATE MEANS OF REMOVING POWER FROM AN INVERTER EXIST IF IT WERE NECESSARY TO DO SO.

REFERENCES: 76BU16D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6211 ABORT: 3/3

ITEM: FUSE, 3A TO AC BUS 3A ON
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) FLCA-3
- 3) FUSE, 3A TO AC BUS 3A ON
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A18F10
PART NUMBER: ME451-0010-1030

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE WOULD PREVENT THE CREW FROM CHANGING THE STATE OF THE LATCHING RELAY FOR ONE PHASE OF AN AC BUS. SINCE THE INVERTERS ARE STARTED ON THE GROUND AND LATCHED ON FOR THE DURATION OF THE FLIGHT, THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE. ALTERNATE MEANS OF REMOVING POWER FROM AN INVERTER EXIST IF IT WERE NECESSARY TO DO SO.

REFERENCES: 76BU16G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6212 ABORT: 3/1R

ITEM: FUSE, 80A TO INV 3 A
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) MAIN DC DIST ASSY #3
- 3) FPCA-3
- 4) FUSE, 80A TO INV 3 A
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 83V76A24F1
PART NUMBER: ME451-0016-0080

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF ONE INVERTER AC PHASE OUTPUT. LOSS OF ALL REDUNDANCY WOULD LIKELY CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

REFERENCES: 76BU13H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6213 ABORT: 3/1R

ITEM: FUSE, 80A TO INV 3 B
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) MAIN DC DIST ASSY #3
- 3) FPCA-3
- 4) FUSE, 80A TO INV 3 B
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 83V76A24F2
PART NUMBER: ME451-0016-0080

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF ONE INVERTER AC PHASE OUTPUT. LOSS OF ALL REDUNDANCY WOULD LIKELY CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

REFERENCES: 76BU13E

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6214 ABORT: 3/1R

ITEM: FUSE, 80A TO INV 3 C
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) MAIN DC DIST ASSY #3
- 3) FPCA-3
- 4) FUSE, 80A TO INV 3 C
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 83V76A24F3
PART NUMBER: ME451-0016-0080

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF ONE INVERTER AC PHASE OUTPUT. LOSS OF ALL REDUNDANCY WOULD LIKELY CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

REFERENCES: 76BU13C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6215

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

ITEM: DIODE, ISOLATION
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER

SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) R1A1 PANEL
- 3) FPCA-3
- 4) DIODE, ISOLATION
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A24A1CR1

PART NUMBER: JANTXV1N4246

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS IN A NON-CRITICAL MEASUREMENT CIRCUIT. ALTERNATE
MEANS OF MEASURING ARE AVAILABLE. NO EFFECT ON
CREW/MISSION/VEHICLE.

REFERENCES: 76BU13G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6216 ABORT: 3/3

ITEM: DIODE, ISOLATION
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) R1A1 PANEL
- 3) FPCA-3
- 4) DIODE, ISOLATION
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A24A1CR1
PART NUMBER: JANTXV1N4246

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS IN A NON-CRITICAL MEASUREMENT CIRCUIT. ALTERNATE
MEANS OF MEASURING ARE AVAILABLE. NO EFFECT ON
CREW/MISSION/VEHICLE.

REFERENCES: 76BU13G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6217

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

ITEM: DIODE, ISOLATION
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER

SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) R1A1 PANEL
- 3) FPCA-3
- 4) DIODE, ISOLATION
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A24A1CR2
PART NUMBER: JANTXV1N4246

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS IN A NON-CRITICAL MEASUREMENT CIRCUIT. ALTERNATE
MEANS OF MEASURING ARE AVAILABLE. NO EFFECT ON
CREW/MISSION/VEHICLE.

REFERENCES: 76BU13D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6218 ABORT: 3/3

ITEM: DIODE, ISOLATION
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) R1A1 PANEL
- 3) FPCA-3
- 4) DIODE, ISOLATION
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A24A1CR2
PART NUMBER: JANTXV1N4246

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS IN A NON-CRITICAL MEASUREMENT CIRCUIT. ALTERNATE
MEANS OF MEASURING ARE AVAILABLE. NO EFFECT ON
CREW/MISSION/VEHICLE.

REFERENCES: 76BU13D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6219

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

ITEM: DIODE, ISOLATION
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER

SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) R1A1 PANEL
- 3) FPCA-3
- 4) DIODE, ISOLATION
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A24A1CR3
PART NUMBER: JANTXV1N4246

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS IN A NON-CRITICAL MEASUREMENT CIRCUIT. ALTERNATE
MEANS OF MEASURING ARE AVAILABLE. NO EFFECT ON
CREW/MISSION/VEHICLE.

REFERENCES: 76BU13B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6220 ABORT: 3/3

ITEM: DIODE, ISOLATION
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) R1A1 PANEL
- 3) FPCA-3
- 4) DIODE, ISOLATION
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A24A1CR3
PART NUMBER: JANTXV1N4246

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS IN A NON-CRITICAL MEASUREMENT CIRCUIT. ALTERNATE
MEANS OF MEASURING ARE AVAILABLE. NO EFFECT ON
CREW/MISSION/VEHICLE.

REFERENCES: 76BU13B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6221 ABORT: 3/3

ITEM: DIODE TO INV 3 A
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) MAIN DC DIST ASSY #3
- 3) FPCA-3
- 4) DIODE TO INV 3 A
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A24CR13

PART NUMBER:

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF INPUT CURRENT SURGE PROTECTION TO THE INVERTER. SINCE THE INVERTERS ARE STARTED ON THE GROUND AND LATCHED "ON", THIS FAILURE WOULD HAVE NO EFFECT DURING A NORMAL MISSION. IF THE INVERTER HAD TO BE RESTARTED DURING FLIGHT, IT MIGHT BE DAMAGED OR LOST. HOWEVER, THERE ARE ENOUGH REDUNDANT AC BUSSES TO HANDLE THE LOADS.

REFERENCES: 76BU12F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6222

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

ITEM: DIODE TO INV 3 A
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER

SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) MAIN DC DIST ASSY #3
- 3) FPCA-3
- 4) DIODE TO INV 3 A
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A24CR13
PART NUMBER:

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE AS
THERE IS NO CURRENT FLOW THROUGH THIS DIODE AFTER INVERTER START
UP.

REFERENCES: 76BU12F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6223

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

ITEM: DIODE TO INV 3 B
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER

SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) MAIN DC DIST ASSY #3
- 3) FPCA-3
- 4) DIODE TO INV 3 B
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A24CR14

PART NUMBER:

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF INPUT CURRENT SURGE PROTECTION TO THE INVERTER. SINCE THE INVERTERS ARE STARTED ON THE GROUND AND LATCHED "ON", THIS FAILURE WOULD HAVE NO EFFECT DURING A NORMAL MISSION. IF THE INVERTER HAD TO BE RESTARTED DURING FLIGHT, IT MIGHT BE DAMAGED OR LOST. HOWEVER, THERE ARE ENOUGH REDUNDANT AC BUSSES TO HANDLE THE LOADS.

REFERENCES: 76BU12D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6224 ABORT: 3/3

ITEM: DIODE TO INV 3 B
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) MAIN DC DIST ASSY #3
- 3) FPCA-3
- 4) DIODE TO INV 3 B
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A24CR14
PART NUMBER:

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE AS
THERE IS NO CURRENT FLOW THROUGH THIS DIODE AFTER INVERTER START
UP.

REFERENCES: 76BU12D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6225 ABORT: 3/3

ITEM: DIODE TO INV 3 C
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) MAIN DC DIST ASSY #3
- 3) FPCA-3
- 4) DIODE TO INV 3 C
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A24CR15
PART NUMBER:

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF INPUT CURRENT SURGE PROTECTION TO THE INVERTER. SINCE THE INVERTERS ARE STARTED ON THE GROUND AND LATCHED "ON", THIS FAILURE WOULD HAVE NO EFFECT DURING A NORMAL MISSION. IF THE INVERTER HAD TO BE RESTARTED DURING FLIGHT, IT MIGHT BE DAMAGED OR LOST. HOWEVER, THERE ARE ENOUGH REDUNDANT AC BUSSES TO HANDLE THE LOADS.

REFERENCES: 76BU12B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6226 ABORT: 3/3

ITEM: DIODE TO INV 3 C
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) MAIN DC DIST ASSY #3
- 3) FPCA-3
- 4) DIODE TO INV 3 C
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A24CR15
PART NUMBER:

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE AS
THERE IS NO CURRENT FLOW THROUGH THIS DIODE AFTER INVERTER START
UP.

REFERENCES: 76BU12B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6227 ABORT: 3/3

ITEM: RESISTOR, 5.1K 1/4W (TO MDM OF3)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) MAIN DC DIST ASSY #3
- 3) FPCA-3
- 4) RESISTOR, 5.1K 1/4W (TO MDM OF3)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A24A1R3
PART NUMBER: RLR07C512GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS ITEM SUPPORTS A NON-CRITICAL MEASUREMENT FUNCTION.
ALTERNATE INDICATORS (TALKBACK) PROVIDE THE SAME FUNCTION.

REFERENCES: 76BU14H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6228 ABORT: 3/3

ITEM: RESISTOR, 5.1K 1/4W (TO MDM OF3)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) MAIN DC DIST ASSY #3
- 3) FPCA-3
- 4) RESISTOR, 5.1K 1/4W (TO MDM OF3)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A24A1R4
PART NUMBER: RLR07C512GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS ITEM SUPPORTS A NON-CRITICAL MEASUREMENT FUNCTION.
ALTERNATE INDICATORS (TALKBACK) PROVIDE THE SAME FUNCTION.

REFERENCES: 76BU14E

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6229 ABORT: 3/3

ITEM: RESISTOR, 5.1K 1/4W (TO MDM OF3)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) MAIN DC DIST ASSY #3
- 3) FPCA-3
- 4) RESISTOR, 5.1K 1/4W (TO MDM OF3)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A24A1R5
PART NUMBER: RLR07C512GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS ITEM SUPPORTS A NON-CRITICAL MEASUREMENT FUNCTION.
ALTERNATE INDICATORS (TALKBACK) PROVIDE THE SAME FUNCTION.

REFERENCES: 76BU14B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6230 ABORT: 3/3

ITEM: RPC, 7.5A TO INV 3 A
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) MAIN DC DIST ASSY #3
- 3) FPCA-3
- 4) RPC, 7.5A TO INV 3 A
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A24RPC8
PART NUMBER: MC450-0017-1075

CAUSES: PIECE PART STRUCTURAL FAILURE, CONTAMINATION, MECH
SHOCK, THERMAL STRESS, VIBRATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD PREVENT THE AC INVERTER FROM BEING TURNED OFF.
HOWEVER THE INPUT CURRENT WOULD BE LIMITED TO 7.5 AMPS.
INVERTERS ARE NORMALLY ON DURING FLIGHT OPERATIONS, SO NO EFFECT
ON CREW/MISSION/VEHICLE.

REFERENCES: 76BU12F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6231 ABORT: 3/3

ITEM: RPC, 7.5A TO INV 3 A
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) MAIN DC DIST ASSY #3
- 3) FPCA-3
- 4) RPC, 7.5A TO INV 3 A
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC	
PRELAUNCH:	3/3	RTLS:	3/3	
LIFTOFF:	3/3	TAL:	3/3	
ONORBIT:	3/3	AOA:	3/3	
DEORBIT:	3/3	ATO:	3/3	
LANDING/SAFING:	3/3			

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A24RPC8
PART NUMBER: MC450-0017-1075

CAUSES: PIECE PART STRUCTURAL FAILURE, CONTAMINATION, MECH
SHOCK, THERMAL STRESS, VIBRATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF CURRENT SURGE PROTECTION ON
THE INVERTER STARTUP. SINCE THE INVERTERS ARE STARTED ON THE
GROUND AND IN-FLIGHT FAILURE WOULD HAVE NO EFFECT. IF AN
INVERTER RESTART IS NEEDED IN-FLIGHT, IT MAY BE DAMAGED OR LOST.

REFERENCES: 76BU12F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6232 ABORT: 3/3

ITEM: RPC, 7.5A TO INV 3 B
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) MAIN DC DIST ASSY #3
- 3) FPCA-3
- 4) RPC, 7.5A TO INV 3 B
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A24RPC9
PART NUMBER: MC450-0017-1075

CAUSES: PIECE PART STRUCTURAL FAILURE, CONTAMINATION, MECH
SHOCK, THERMAL STRESS, VIBRATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD PREVENT THE AC INVERTER FROM BEING TURNED OFF.
HOWEVER THE INPUT CURRENT WOULD BE LIMITED TO 7.5 AMPS.
INVERTERS ARE NORMALLY ON DURING FLIGHT OPERATIONS, SO NO EFFECT
ON CREW/MISSION/VEHICLE.

REFERENCES: 76BU12D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6233 ABORT: 3/3

ITEM: RPC, 7.5A TO INV 3 B
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) MAIN DC DIST ASSY #3
- 3) FPCA-3
- 4) RPC, 7.5A TO INV 3 B
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A24RPC9
PART NUMBER: MC450-0017-1075

CAUSES: PIECE PART STRUCTURAL FAILURE, CONTAMINATION, MECH
SHOCK, THERMAL STRESS, VIBRATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF CURRENT SURGE PROTECTION ON
THE INVERTER STARTUP. SINCE THE INVERTERS ARE STARTED ON THE
GROUND AND IN-FLIGHT FAILURE WOULD HAVE NO EFFECT. IF AN
INVERTER RESTART IS NEEDED IN-FLIGHT, IT MAY BE DAMAGED OR LOST.

REFERENCES: 76BU12D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6234 ABORT: 3/3

ITEM: RPC, 7.5A TO INV 3 C
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) MAIN DC DIST ASSY #3
- 3) FPCA-3
- 4) RPC, 7.5A TO INV 3 C
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A24RPC10
PART NUMBER: MC450-0017-1075

CAUSES: PIECE PART STRUCTURAL FAILURE, CONTAMINATION, MECH
SHOCK, THERMAL STRESS, VIBRATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD PREVENT THE AC INVERTER FROM BEING TURNED OFF.
HOWEVER THE INPUT CURRENT WOULD BE LIMITED TO 7.5 AMPS.
INVERTERS ARE NORMALLY ON DURING FLIGHT OPERATIONS, SO NO EFFECT
ON CREW/MISSION/VEHICLE.

REFERENCES: 76BU12A

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6235 ABORT: 3/3

ITEM: RPC, 7.5A TO INV 3 C
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) MAIN DC DIST ASSY #3
- 3) FPCA-3
- 4) RPC, 7.5A TO INV 3 C
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A24RPC10
PART NUMBER: MC450-0017-1075

CAUSES: PIECE PART STRUCTURAL FAILURE, CONTAMINATION, MECH
SHOCK, THERMAL STRESS, VIBRATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF CURRENT SURGE PROTECTION ON
THE INVERTER STARTUP. SINCE THE INVERTERS ARE STARTED ON THE
GROUND AND IN-FLIGHT FAILURE WOULD HAVE NO EFFECT. IF AN
INVERTER RESTART IS NEEDED IN-FLIGHT, IT MAY BE DAMAGED OR LOST.

REFERENCES: 76BU12A

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6236 ABORT: 3/1R

ITEM: RELAY, LATCHING TO INVERTER 3A
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) R1A1 PANEL
- 3) FLCA-3
- 4) FPCA-3
- 5) RELAY, LATCHING TO INVERTER 3A
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 83V76A24K1
PART NUMBER: MC455-0128-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE LOSS OF DC POWER TO THE INVERTER
RESULTING IN THE LOSS OF ONE PHASE OF THE THREE PHASE AC BUS.
REDUNDANT POWER IS AVAILABLE FOR CRITICAL LOADS. LOSS OF ALL
REDUNDANCY MAY CAUSE LOSS OF CREW/VEHICLE DUE TO LOSS OF POWER TO
CRITICAL LOADS.

REFERENCES: 76BU13H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6237 ABORT: 3/3

ITEM: RELAY, LATCHING TO INVERTER 3A
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) R1A1 PANEL
- 3) FLCA-3
- 4) FPCA-3
- 5) RELAY, LATCHING TO INVERTER 3A
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A24K1
PART NUMBER: MC455-0128-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD PREVENT REMOVING DC POWER TO THE INPUT OF THE
INVERTER. NO EFFECT ON CREW/MISSION/VEHICLE AS THIS IS NORMAL
FLIGHT CONFIGURATION.

REFERENCES: 76BU13H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6238 ABORT: 3/3

ITEM: RELAY, LATCHING TO INVERTER 3B
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) R1A1 PANEL
- 3) FLCA-3
- 4) FPCA-3
- 5) RELAY, LATCHING TO INVERTER 3B
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A24K2
PART NUMBER: MC455-0128-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD PREVENT REMOVING DC POWER TO THE INPUT OF THE
INVERTER. NO EFFECT ON CREW/MISSION/VEHICLE AS THIS IS NORMAL
FLIGHT CONFIGURATION.

REFERENCES: 76BU13E

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6239 ABORT: 3/1R

ITEM: RELAY, LATCHING TO INVERTER 3B
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) R1A1 PANEL
- 3) FLCA-3
- 4) FPCA-3
- 5) RELAY, LATCHING TO INVERTER 3B
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 83V76A24K2
PART NUMBER: MC455-0128-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE LOSS OF DC POWER TO THE INVERTER
RESULTING IN THE LOSS OF ONE PHASE OF THE THREE PHASE AC BUS.
REDUNDANT POWER IS AVAILABLE FOR CRITICAL LOADS. LOSS OF ALL
REDUNDANCY MAY CAUSE LOSS OF CREW/VEHICLE DUE TO LOSS OF POWER TO
CRITICAL LOADS.

REFERENCES: 76BU13E

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6240 ABORT: 3/1R

ITEM: RELAY, LATCHING TO INVERTER 3C
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) R1A1 PANEL
- 3) FLCA-3
- 4) FPCA-3
- 5) RELAY, LATCHING TO INVERTER 3C
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 83V76A24K3
PART NUMBER: MC455-0128-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE LOSS OF DC POWER TO THE INVERTER
RESULTING IN THE LOSS OF ONE PHASE OF THE THREE PHASE AC BUS.
REDUNDANT POWER IS AVAILABLE FOR CRITICAL LOADS. LOSS OF ALL
REDUNDANCY MAY CAUSE LOSS OF CREW/VEHICLE DUE TO LOSS OF POWER TO
CRITICAL LOADS.

REFERENCES: 76BU13C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6241 ABORT: 3/3

ITEM: RELAY, LATCHING TO INVERTER 3C
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) R1A1 PANEL
- 3) FLCA-3
- 4) FPCA-3
- 5) RELAY, LATCHING TO INVERTER 3C
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A24K3
PART NUMBER: MC455-0128-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD PREVENT REMOVING DC POWER TO THE INPUT OF THE
INVERTER. NO EFFECT ON CREW/MISSION/VEHICLE AS THIS IS NORMAL
FLIGHT CONFIGURATION.

REFERENCES: 76BU13C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6242 ABORT: 3/1R

ITEM: INVERTER 3 A
FAILURE MODE: FAILS OFF, OUTPUT UNDER/OVER VOLTAGE

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) R1A1 PANEL
- 3) FLCA-3
- 4) FPCA-3
- 5) INVERTER 3 A
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 83V76A7
PART NUMBER: MC495-0012-0004

CAUSES: TEMPERATURE, MECH SHOCK, VIBRATION, PIECE-PART
STRUCTURAL FAILURE

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE THE LOSS OF ONE PHASE OF THE THREE
PHASE AC BUSS. MOST MOTORS ON THE VEHICLE CAN OPERATE ON TWO
PHASES. CRITICAL LOADS ARE REDUNDANTLY POWERED FROM THE OTHER TWO
BUSSES. LOSS OF ALL REDUNDANCY WOULD CAUSE LOSS OF CREW/VEHICLE
DUE TO INABILITY TO POWER CRITICAL LOADS.

REFERENCES: 76BU10H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6243 ABORT: 3/3

ITEM: INVERTER 3 A
FAILURE MODE: OVERLOAD SIGNAL FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) R1A1 PANEL
- 3) FLCA-3
- 4) FPCA-3
- 5) INVERTER 3 A
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A7
PART NUMBER: MC495-0012-0004

CAUSES: TEMPERATURE, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE PREVENTS THE AUTOMATIC CUT OFF OF THE OVERLOADED INVERTER. CREW MAY BE ABLE TO DETECT OVERLOAD CONDITION VIA OVER/UNDER VOLTAGE SENSORS.

REFERENCES: 76BU10H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6244 ABORT: 3/1R

ITEM: INVERTER 3 A
FAILURE MODE: INADVERTENT OVERLOAD SIGNAL OUTPUT

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) R1A1 PANEL
- 3) FLCA-3
- 4) FPCA-3
- 5) INVERTER 3 A
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 83V76A7
PART NUMBER: MC495-0012-0004

CAUSES: TEMPERATURE, VIBRATION, MECH SHOCK, CONTAMINATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE ONE PHASE OF THE THREE PHASE AC BUS TO BE LOST. THE PHASE COULD BE RESTORED BY CREW ACTION AND THE SIGNAL INHIBITED. MULTIPLE FAILURES OF THIS MODE MAY CAUSE LOSS OF CREW VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

REFERENCES: 76BU10H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6245 ABORT: 3/1R

ITEM: INVERTER 3 A
FAILURE MODE: PHASE REF CHANGE

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) R1A1 PANEL
- 3) FLCA-3
- 4) FPCA-3
- 5) INVERTER 3 A
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 83V76A7
PART NUMBER: MC495-0012-0004

CAUSES: PIECE PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD PROBABLY CAUSE AN OVERLOAD SIGNAL TO BE OUTPUT AND ALL THREE PHASES OF ONE AC BUS WOULD BE CUT OFF. CRITICAL LOADS ARE REDUNDANTLY POWERED SO NO EFFECT ON FIRST FAILURE. LOSS OF ALL REDUNDANCY WOULD PROBABLY CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

REFERENCES: 76BU10H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE:	3/11/87	HIGHEST CRITICALITY	HDW/FUNC
SUBSYSTEM:	EPD&C	FLIGHT:	3/1R
MDAC ID:	6246	ABORT:	3/1R

ITEM: INVERTER 3 B
FAILURE MODE: FAILS OFF, OUTPUT UNDER/OVER VOLTAGE

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) R1A1 PANEL
- 3) FLCA-3
- 4) FPCA-3
- 5) INVERTER 3 B
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 83V76A8
PART NUMBER: MC495-0012-0004

CAUSES: TEMPERATURE, MECH SHOCK, VIBRATION, PIECE-PART
STRUCTURAL FAILURE

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE THE LOSS OF ONE PHASE OF THE THREE PHASE AC BUSS. MOST MOTORS ON THE VEHICLE CAN OPERATE ON TWO PHASES. CRITICAL LOADS ARE REDUNDANTLY POWERED FROM THE OTHER TWO BUSES. LOSS OF ALL REDUNDANCY WOULD CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

REFERENCES: 76BU10E

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6247 ABORT: 3/3

ITEM: INVERTER 3 B
FAILURE MODE: OVERLOAD SIGNAL FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) R1A1 PANEL
- 3) FLCA-3
- 4) FPCA-3
- 5) INVERTER 3 B
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC	
PRELAUNCH:	3/3	RTLS:	3/3	
LIFTOFF:	3/3	TAL:	3/3	
ONORBIT:	3/3	AOA:	3/3	
DEORBIT:	3/3	ATO:	3/3	
LANDING/SAFING:	3/3			

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A8
PART NUMBER: MC495-0012-0004

CAUSES: TEMPERATURE, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE PREVENTS THE AUTOMATIC CUT OFF OF THE OVERLOADED INVERTER. CREW MAY BE ABLE TO DETECT OVERLOAD CONDITION VIA OVER/UNDER VOLTAGE SENSORS.

REFERENCES: 76BU10E

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6248 ABORT: 3/1R

ITEM: INVERTER 3 B
FAILURE MODE: INADVERTENT OVERLOAD SIGNAL OUTPUT

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) R1A1 PANEL
- 3) FLCA-3
- 4) FPCA-3
- 5) INVERTER 3 B
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES	
FLIGHT PHASE	HDW/FUNC	ABORT
PRELAUNCH:	3/3	RTLS: 3/1R
LIFTOFF:	3/1R	TAL: 3/1R
ONORBIT:	3/1R	AOA: 3/1R
DEORBIT:	3/1R	ATO: 3/1R
LANDING/SAFING:	3/3	

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 83V76A8
PART NUMBER: MC495-0012-0004

CAUSES: TEMPERATURE, VIBRATION, MECH SHOCK, CONTAMINATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE ONE PHASE OF THE THREE PHASE AC BUS TO BE LOST. THE PHASE COULD BE RESTORED BY CREW ACTION AND THE SIGNAL INHIBITED. MULTIPLE FAILURES OF THIS MODE MAY CAUSE LOSS OF CREW VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

REFERENCES: 76BU10E

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6249 ABORT: 3/1R

ITEM: INVERTER 3 B
FAILURE MODE: PHASE REF CHANGE

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) R1A1 PANEL
- 3) FLCA-3
- 4) FPCA-3
- 5) INVERTER 3 B
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 83V76A8
PART NUMBER: MC495-0012-0004

CAUSES: PIECE PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD PROBABLY CAUSE AN OVERLOAD SIGNAL TO BE OUTPUT AND ALL THREE PHASES OF ONE AC BUS WOULD BE CUT OFF. CRITICAL LOADS ARE REDUNDANTLY POWERED SO NO EFFECT ON FIRST FAILURE. LOSS OF ALL REDUNDANCY WOULD PROBABLY CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

REFERENCES: 76BU10E

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE:	3/11/87	HIGHEST CRITICALITY	HDW/FUNC
SUBSYSTEM:	EPD&C	FLIGHT:	3/1R
MDAC ID:	6250	ABORT:	3/1R

ITEM: INVERTER 3 C
FAILURE MODE: FAILS OFF, OUTPUT UNDER/OVER VOLTAGE

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) R1A1 PANEL
- 3) FLCA-3
- 4) FPCA-3
- 5) INVERTER 3 C
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 83V76A9
PART NUMBER: MC495-0012-0004

CAUSES: TEMPERATURE, MECH SHOCK, VIBRATION, PIECE-PART
STRUCTURAL FAILURE

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE THE LOSS OF ONE PHASE OF THE THREE PHASE AC BUSS. MOST MOTORS ON THE VEHICLE CAN OPERATE ON TWO PHASES. CRITICAL LOADS ARE REDUNDANTLY POWERED FROM THE OTHER TWO BUSES. LOSS OF ALL REDUNDANCY WOULD CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

REFERENCES: 76BU10C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6251 ABORT: 3/3

ITEM: INVERTER 3 C
FAILURE MODE: OVERLOAD SIGNAL FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) R1A1 PANEL
- 3) FLCA-3
- 4) FPCA-3
- 5) INVERTER 3 C
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A9
PART NUMBER: MC495-0012-0004

CAUSES: TEMPERATURE, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE PREVENTS THE AUTOMATIC CUT OFF OF THE OVERLOADED INVERTER. CREW MAY BE ABLE TO DETECT OVERLOAD CONDITION VIA OVER/UNDER VOLTAGE SENSORS.

REFERENCES: 76BU10C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6252 ABORT: 3/1R

ITEM: INVERTER 3 C
FAILURE MODE: INADVERTENT OVERLOAD SIGNAL OUTPUT

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) R1A1 PANEL
- 3) FLCA-3
- 4) FPCA-3
- 5) INVERTER 3 C
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 83V76A9
PART NUMBER: MC495-0012-0004

CAUSES: TEMPERATURE, VIBRATION, MECH SHOCK, CONTAMINATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE ONE PHASE OF THE THREE PHASE AC BUS TO BE LOST. THE PHASE COULD BE RESTORED BY CREW ACTION AND THE SIGNAL INHIBITED. MULTIPLE FAILURES OF THIS MODE MAY CAUSE LOSS OF CREW VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

REFERENCES: 76BU10C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6253 ABORT: 3/1R

ITEM: INVERTER 3 C
FAILURE MODE: PHASE REF CHANGE

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) R1A1 PANEL
- 3) FLCA-3
- 4) FPCA-3
- 5) INVERTER 3 C
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 83V76A9
PART NUMBER: MC495-0012-0004

CAUSES: PIECE PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD PROBABLY CAUSE AN OVERLOAD SIGNAL TO BE OUTPUT AND ALL THREE PHASES OF ONE AC BUS WOULD BE CUT OFF. CRITICAL LOADS ARE REDUNDANTLY POWERED SO NO EFFECT ON FIRST FAILURE. LOSS OF ALL REDUNDANCY WOULD PROBABLY CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

REFERENCES: 76BU10C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6254 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE III (AC BUS 3 ON)
FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) PRE-FLIGHT TEST BUS #2
- 3) FLCA-3
- 4) HYBRID DRIVER TYPE III (AC BUS 3 ON)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A18AR9
PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,
PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:
THIS ITEM IS USED FOR GROUND C/O ONLY.

REFERENCES: 76BV22G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6255 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE III (AC BUS 3 ON)
FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) PRE-FLIGHT TEST BUS #2
- 3) FLCA-3
- 4) HYBRID DRIVER TYPE III (AC BUS 3 ON)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A18AR9
PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,
PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:
THIS ITEM IS USED FOR GROUND C/O ONLY.

REFERENCES: 76BV22G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6256 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE III (AC BUS 3 OFF)
FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) PRE-FLIGHT TEST BUS #2
- 3) FLCA-3
- 4) HYBRID DRIVER TYPE III (AC BUS 3 OFF)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A18AR10
PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,
PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:
THIS ITEM IS USED FOR GROUND C/O ONLY.

REFERENCES: 76BV22H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6257 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE III (AC BUS 3 OFF)
FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) PRE-FLIGHT TEST BUS #2
- 3) FLCA-3
- 4) HYBRID DRIVER TYPE III (AC BUS 3 OFF)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A18AR10
PART NUMBER: MC477-0263-0002

CAUSES: VIBRATION, MECH SHOCK, THERMAL STRESS, CONTAMINATION,
PIECE PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:
THIS ITEM IS USED FOR GROUND C/O ONLY.

REFERENCES: 76BV22H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6258 ABORT: 3/1R

ITEM: SWITCH, TOGGLE 3PDT (INV/AC BUS 3)
FAILURE MODE: FAILS TO TRANSFER

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) R1A1 PANEL
- 3) MAIN DC DIST ASSY #3
- 4) SWITCH, TOGGLE 3PDT (INV/AC BUS 3)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 32V73A1A1S21
PART NUMBER: ME452-0102-7305

CAUSES: PIECE PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK,
CONTAMINATION

EFFECTS/RATIONALE:

IF THE AC BUS RELAY IS TRIPPED OFF BY THE AC OVER/UNDER VOLTAGE
SENSOR AND THIS FAILURE OCCURS, THE RESULT IS THE LOSS OF ONE
PHASE OF THE AC BUS. LOSS OF ALL REDUNDANCY WOULD CAUSE LOSS OF
CREW/VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

REFERENCES: 76BV24F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6259 ABORT: 3/1R

ITEM: SWITCH, TOGGLE 3PDT (INV/AC BUS 3)
FAILURE MODE: INADVERTENT TRANSFER

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) R1A1 PANEL
- 3) MAIN DC DIST ASSY #3
- 4) SWITCH, TOGGLE 3PDT (INV/AC BUS 3)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 32V73A1A1S21
PART NUMBER: ME452-0102-7305

CAUSES: PIECE PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK,
CONTAMINATION

EFFECTS/RATIONALE:

THIS FAILURE COULD DISCONNECT ONE PHASE OF THE AC BUS FROM THE
INVERTER. LOSS OF ALL REDUNDANCY WOULD CAUSE LOSS OF
CREW/VEHICLE DUE TO INABILITY TO POWER CRITICAL LOADS.

REFERENCES: 76BV24F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6260 ABORT: 3/1R

ITEM: SWITCH, TOGGLE SPDT (AC 3 BUS SNSR)
FAILURE MODE: FAILS TO TRANSFER

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) 013 PANEL
- 3) R1A1 PANEL
- 4) SWITCH, TOGGLE SPDT (AC 3 BUS SNSR)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/3	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 32V73A1A1S24
PART NUMBER: ME452-0102-7103

CAUSES: PIECE PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK,
CONTAMINATION

EFFECTS/RATIONALE:

WORST CASE FAILURE IS LOSS OF CONTROL OF THE AC OVER/UNDER
VOLTAGE SENSOR WHICH COULD PREVENT THE DETECTION AND CORRECTION
OF AN INVERTER/AC BUS ERROR CONDITION. LOSS OF ALL REDUNDANCY
COULD LEAD TO LOSS OF CREW/VEHICLE DUE TO LOSS OF POWER TO LOADS.

REFERENCES: 76BV22B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6261 ABORT: 3/1R

ITEM: SWITCH, TOGGLE SPDT (AC 3 BUS SNSR)
FAILURE MODE: INADVERTENT TRANSFER

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) 013 PANEL
- 3) R1A1 PANEL
- 4) SWITCH, TOGGLE SPDT (AC 3 BUS SNSR)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/3	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 32V73A1A1S24
PART NUMBER: ME452-0102-7103

CAUSES: PIECE PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK,
CONTAMINATION

EFFECTS/RATIONALE:

WORST CASE FAILURE IS LOSS OF CONTROL OF THE AC OVER/UNDER
VOLTAGE SENSOR WHICH COULD PREVENT THE DETECTION AND CORRECTION
OF AN INVERTER/AC BUS ERROR CONDITION. LOSS OF ALL REDUNDANCY
COULD LEAD TO LOSS OF CREW/VEHICLE DUE TO LOSS OF POWER TO LOADS.

REFERENCES: 76BV22B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6262 ABORT: 3/1R

ITEM: CIRCUIT BREAKER, 3A TO AC3 BUS SENSOR
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) 013 PANEL
- 3) CIRCUIT BREAKER, 3A TO AC3 BUS SENSOR
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 33V73A13CB17
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

WORST CASE FAILURE OCCURS WHEN THE SENSOR MONITOR/AUTO SWITCH
FAILS ALSO. THE RESULT IS LOSS OF CAPABILITY TO DETECT AND
CORRECT AN INVERTER/AC BUS ERROR CONDITION. LOSS OF ALL AC POWER
WOULD LIKELY CAUSE LOSS OF CREW/VEHICLE DUE TO LACK OF POWER TO
CRITICAL LOADS.

REFERENCES: 76BV24B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6263 ABORT: 3/1R

ITEM: CIRCUIT BREAKER, 3A TO AC3 BUS SENSOR
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) 013 PANEL
- 3) CIRCUIT BREAKER, 3A TO AC3 BUS SENSOR
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 33V73A13CB17
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

WORST CASE FAILURE OCCURS WHEN THE SENSOR MONITOR/AUTO SWITCH
FAILS ALSO. THE RESULT IS LOSS OF CAPABILITY TO DETECT AND
CORRECT AN INVERTER/AC BUS ERROR CONDITION. LOSS OF ALL AC POWER
WOULD LIKELY CAUSE LOSS OF CREW/VEHICLE DUE TO LACK OF POWER TO
CRITICAL LOADS.

REFERENCES: 76BV24B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6264 ABORT: 3/1R

ITEM: AC OVER/UNDER VOLT SNSR 3
FAILURE MODE: INADVERTENT OUTPUT

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS #3
- 2) INV DIST & CONT ASSY #3
- 3) AC OVER/UNDER VOLT SNSR 3
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 83V76A37VS1
PART NUMBER: MC431-0129-0011

CAUSES: CONTAMINATION, THERMAL SHOCK, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF ONE PHASE OF A THREE PHASE AC BUS. LOSS OF ALL AC BUSES WOULD LIKELY CAUSE LOSS OF CREW/VEHICLE.

REFERENCES: 76BV

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6265 ABORT: 3/3

ITEM: AC OVER/UNDER VOLT SNSR 3
FAILURE MODE: LOSS OF OUTPUT

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS #3
- 2) INV DIST & CONT ASSY #3
- 3) AC OVER/UNDER VOLT SNSR 3
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A37VS1
PART NUMBER: MC431-0129-0011

CAUSES: CONTAMINATION, THERMAL SHOCK, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF ONE PHASE OF A THREE PHASE AC BUS. LOSS OF ALL AC BUSES WOULD LIKELY CAUSE LOSS OF CREW/VEHICLE.

REFERENCES: 76BV

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6266 ABORT: 3/3

ITEM: DIODE, BLOCKING 1A (TO 3 A SET)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GROUND C/O (AC BUS 3)
- 2) PRE-FLIGHT TEST BUS #2
- 3) FLCA-3
- 4) INV DIST & CONT ASSY #3
- 5) DIODE, BLOCKING 1A (3 TO A SET)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A37A1CR1
PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS USED FOR GROUND OPERATIONS ONLY AND IS NON-CRITICAL FOR FLIGHT OPERATIONS.

REFERENCES: 76BV21G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6267 ABORT: 3/3

ITEM: DIODE, BLOCKING 1A (TO 3 A SET)
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GROUND C/O (AC BUS 3)
- 2) PRE-FLIGHT TEST BUS #2
- 3) FLCA-3
- 4) INV DIST & CONT ASSY #3
- 5) DIODE, BLOCKING 1A (TO 3 A SET)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A37A1CR1
PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS USED FOR GROUND OPERATIONS ONLY AND IS NON-CRITICAL FOR FLIGHT OPERATIONS.

REFERENCES: 76BV21G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6268 ABORT: 3/3

ITEM: DIODE, BLOCKING 1A (TO 3 B SET)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GROUND C/O (AC BUS 3)
- 2) PRE-FLIGHT TEST BUS #2
- 3) FLCA-3
- 4) INV DIST & CONT ASSY #3
- 5) DIODE, BLOCKING 1A (TO 3 B SET)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A37A1CR2
PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS USED FOR GROUND OPERATIONS ONLY AND IS NON-CRITICAL FOR FLIGHT OPERATIONS.

REFERENCES: 76BV21G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6269 ABORT: 3/3

ITEM: DIODE, BLOCKING 1A (TO 3 B SET)
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GROUND C/O (AC BUS 3)
- 2) PRE-FLIGHT TEST BUS #2
- 3) FLCA-3
- 4) INV DIST & CONT ASSY #3
- 5) DIODE, BLOCKING 1A (TO 3 B SET)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A37A1CR2
PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS USED FOR GROUND OPERATIONS ONLY AND IS NON-CRITICAL FOR FLIGHT OPERATIONS.

REFERENCES: 76BV21G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6270 ABORT: 3/3

ITEM: DIODE, BLOCKING 1A (TO 3 C SET)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GROUND C/O (AC BUS 3)
- 2) PRE-FLIGHT TEST BUS #2
- 3) FLCA-3
- 4) INV DIST & CONT ASSY #3
- 5) DIODE, BLOCKING 1A (TO 3 C SET)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A37A1CR3
PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS USED FOR GROUND OPERATIONS ONLY AND IS NON-CRITICAL FOR FLIGHT OPERATIONS.

REFERENCES: 76BV21G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6271 ABORT: 3/3

ITEM: DIODE, BLOCKING 1A (TO 3 C SET)
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GROUND C/O (AC BUS 3)
- 2) PRE-FLIGHT TEST BUS #2
- 3) FLCA-3
- 4) INV DIST & CONT ASSY #3
- 5) DIODE, BLOCKING 1A (TO 3 C SET)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A37A1CR3
PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS USED FOR GROUND OPERATIONS ONLY AND IS NON-CRITICAL FOR FLIGHT OPERATIONS.

REFERENCES: 76BV21G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6272 ABORT: 3/3

ITEM: DIODE, BLOCKING 1A (TO 3 A RESET)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GROUND C/O (AC BUS 3)
- 2) PRE-FLIGHT TEST BUS #2
- 3) FLCA-3
- 4) INV DIST & CONT ASSY #3
- 5) DIODE, BLOCKING 1A (TO 3 A RESET)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A37A1CR4
PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS USED FOR GROUND OPERATIONS ONLY AND IS NON-CRITICAL FOR FLIGHT OPERATIONS.

REFERENCES: 76BV21H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6273 ABORT: 3/1R

ITEM: DIODE, BLOCKING 1A (TO 3 A RESET)
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GROUND C/O (AC BUS 3)
- 2) PRE-FLIGHT TEST BUS #2
- 3) FLCA-3
- 4) INV DIST & CONT ASSY #3
- 5) DIODE, BLOCKING 1A (TO 3 A RESET)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [3] B [F] C [P]

LOCATION: 83V76A37A1CR4
PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

IF THE AC OVER/UNDER VOLTAGE SENSOR TURNS ONE PHASE OFF, THIS FAILURE WOULD CAUSE LOSS OF THE ENTIRE AC BUS. DURING HIGH WORKLOAD PERIODS THIS MAY CAUSE LOSS OF CREW/VEHICLE BECAUSE OF LOSS OF POWER TO CRITICAL LOADS.

REFERENCES: 76BV21H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE:	3/11/87	HIGHEST CRITICALITY	HDW/FUNC
SUBSYSTEM:	EPD&C	FLIGHT:	3/3
MDAC ID:	6274	ABORT:	3/3

ITEM: DIODE, BLOCKING 1A (TO 3 B RESET)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GROUND C/O (AC BUS 3)
- 2) PRE-FLIGHT TEST BUS #2
- 3) FLCA-3
- 4) INV DIST & CONT ASSY #3
- 5) DIODE, BLOCKING 1A (TO 3 B RESET)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A37A1CR5
PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS USED FOR GROUND OPERATIONS ONLY AND IS NON-CRITICAL FOR FLIGHT OPERATIONS.

REFERENCES: 76BV21H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6275 ABORT: 3/1R

ITEM: DIODE, BLOCKING 1A (TO 3 B RESET)
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GROUND C/O (AC BUS 3)
- 2) PRE-FLIGHT TEST BUS #2
- 3) FLCA-3
- 4) INV DIST & CONT ASSY #3
- 5) DIODE, BLOCKING 1A (TO 3 B RESET)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [3] B [F] C [P]

LOCATION: 83V76A37A1CR5
PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

IF THE AC OVER/UNDER VOLTAGE SENSOR TURNS ONE PHASE OFF, THIS FAILURE WOULD CAUSE LOSS OF THE ENTIRE AC BUS. DURING HIGH WORKLOAD PERIODS THIS MAY CAUSE LOSS OF CREW/VEHICLE BECAUSE OF LOSS OF POWER TO CRITICAL LOADS.

REFERENCES: 76BV21H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6276 ABORT: 3/3

ITEM: DIODE, BLOCKING 1A (TO 3 C RESET)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GROUND C/O (AC BUS 3)
- 2) PRE-FLIGHT TEST BUS #2
- 3) FLCA-3
- 4) INV DIST & CONT ASSY #3
- 5) DIODE, BLOCKING 1A (TO 3 C RESET)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A37A1CR6
PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS USED FOR GROUND OPERATIONS ONLY AND IS NON-CRITICAL FOR FLIGHT OPERATIONS.

REFERENCES: 76BV21H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6277 ABORT: 3/1R

ITEM: DIODE, BLOCKING 1A (TO 3 C RESET)
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GROUND C/O (AC BUS 3)
- 2) PRE-FLIGHT TEST BUS #2
- 3) FLCA-3
- 4) INV DIST & CONT ASSY #3
- 5) DIODE, BLOCKING 1A (TO 3 C RESET)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [3] B [F] C [P]

LOCATION: 83V76A37A1CR6
PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

IF THE AC OVER/UNDER VOLTAGE SENSOR TURNS ONE PHASE OFF, THIS FAILURE WOULD CAUSE LOSS OF THE ENTIRE AC BUS. DURING HIGH WORKLOAD PERIODS THIS MAY CAUSE LOSS OF CREW/VEHICLE BECAUSE OF LOSS OF POWER TO CRITICAL LOADS.

REFERENCES: 76BV21H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE:	3/11/87	HIGHEST CRITICALITY	HDW/FUNC
SUBSYSTEM:	EPD&C	FLIGHT:	3/3
MDAC ID:	6278	ABORT:	3/3

ITEM: DIODE, BLOCKING 1A (TO 3 C RESET)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST & CONT ASSY #3
- 3) AC OVER/UNDER VOLT SNSR #3
- 4) DIODE, BLOCKING 1A (TO 3 C RESET)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A37A1CR7
PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF CAPABILITY TO RESET THE AFFECTED PHASE RELAY WHEN THE AC OVER/UNDER VOLT SENSOR TRIPS. HOWEVER, THE CREW WILL HEAR ALARMS AND BE ABLE TO RESET THE PHASE RELAY AUTOMATICALLY.

SEVERAL MEANS OF MANUAL RESET ARE AVAILABLE INCLUDING REMOVING DC POWER FROM THE AFFECTED INVERTER. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BV15F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6279 ABORT: 3/3

ITEM: DIODE, BLOCKING 1A (TO 3 C RESET)
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST & CONT ASSY #3
- 3) AC OVER/UNDER VOLT SNSR #3
- 4) DIODE, BLOCKING 1A (TO 3 C RESET)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A37A1CR7

PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD RESULT IN LOSS OF REDUNDANT ISOLATION BETWEEN THE AC OVER/UNDER VOLT SENSOR AND THE AFFECTED PHASE RESET RELAY. THE SENSOR HAS AN INTERNAL ISOLATION DIODE AS A BACK-UP.

REFERENCES: 76BV15F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE:	3/11/87	HIGHEST CRITICALITY	HDW/FUNC
SUBSYSTEM:	EPD&C	FLIGHT:	3/3
MDAC ID:	6280	ABORT:	3/3

ITEM: DIODE, BLOCKING 1A (TO 3 B RESET)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST & CONT ASSY #3
- 3) AC OVER/UNDER VOLT SNSR #3
- 4) DIODE, BLOCKING 1A (TO 3 B RESET)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A37A1CR8
PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF CAPABILITY TO RESET THE AFFECTED PHASE RELAY WHEN THE AC OVER/UNDER VOLT SENSOR TRIPS. HOWEVER, THE CREW WILL HEAR ALARMS AND BE ABLE TO RESET THE PHASE RELAY AUTOMATICALLY. SEVERAL MEANS OF MANUAL RESET ARE AVAILABLE INCLUDING REMOVING DC POWER FROM THE AFFECTED INVERTER. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BV15F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6281 ABORT: 3/3

ITEM: DIODE, BLOCKING 1A (TO 3 B RESET)
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST & CONT ASSY #3
- 3) AC OVER/UNDER VOLT SNSR #3
- 4) DIODE, BLOCKING 1A (TO 3 B RESET)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A37A1CR8
PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD RESULT IN LOSS OF REDUNDANT ISOLATION BETWEEN THE AC OVER/UNDER VOLT SENSOR AND THE AFFECTED PHASE RESET RELAY. THE SENSOR HAS AN INTERNAL ISOLATION DIODE AS A BACK-UP.

REFERENCES: 76BV15F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6282 ABORT: 3/3

ITEM: DIODE, BLOCKING 1A (TO 3 A RESET)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST & CONT ASSY #3
- 3) AC OVER/UNDER VOLT SNSR #3
- 4) DIODE, BLOCKING 1A (TO 3 A RESET)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A37A1CR9
PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF CAPABILITY TO RESET THE AFFECTED PHASE RELAY WHEN THE AC OVER/UNDER VOLT SENSOR TRIPS. HOWEVER, THE CREW WILL HEAR ALARMS AND BE ABLE TO RESET THE PHASE RELAY AUTOMATICALLY. SEVERAL MEANS OF MANUAL RESET ARE AVAILABLE INCLUDING REMOVING DC POWER FROM THE AFFECTED INVERTER. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BV15F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6283 ABORT: 3/3

ITEM: DIODE, BLOCKING 1A (TO 3 A RESET)
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST & CONT ASSY #3
- 3) AC OVER/UNDER VOLT SNSR #3
- 4) DIODE, BLOCKING 1A (TO 3 A RESET)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A37A1CR9
PART NUMBER: JANTXV1N4944

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD RESULT IN LOSS OF REDUNDANT ISOLATION BETWEEN THE AC OVER/UNDER VOLT SENSOR AND THE AFFECTED PHASE RESET RELAY. THE SENSOR HAS AN INTERNAL ISOLATION DIODE AS A BACK-UP.

REFERENCES: 76BV15F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE:	3/11/87	HIGHEST CRITICALITY	HDW/FUNC
SUBSYSTEM:	EPD&C	FLIGHT:	3/3
MDAC ID:	6284	ABORT:	3/3

ITEM: RESISTOR, 5.1K 1/4W (TO MDM OF3)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST & CONT ASSY #3
- 3) AC BUS OVER/UNDER VOLTAGE SNSR
- 4) RESISTOR, 5.1K 1/4W (TO MDM OF3)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A37A1R1
PART NUMBER: RLR07C512GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS MEASUREMENT IS NOT CRITICAL TO VEHICLE OPERATION.

REFERENCES: 76BV19C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6285 ABORT: 3/3

ITEM: RESISTOR, 5.1K 1/4W (TO MDM OF3)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST & CONT ASSY #3
- 3) AC BUS OVER/UNDER VOLTAGE SNSR
- 4) RESISTOR, 5.1K 1/4W (TO MDM OF3)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A37A1R2
PART NUMBER: RLR07C512GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS MEASUREMENT IS NOT CRITICAL TO VEHICLE OPERATION.

REFERENCES: 76BV19C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6286 ABORT: 3/3

ITEM: RESISTOR, 5.1K 1/4W (TO MDM OF3)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST & CONT ASSY #3
- 3) ESS BUS 3AB
- 4) RESISTOR, 5.1K 1/4W (TO MDM OF3)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		
	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A37A1R3
PART NUMBER: RLR07C512GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS MEASUREMENT IS NOT CRITICAL TO VEHICLE OPERATION.

REFERENCES: 76BV12H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6287 ABORT: 3/3

ITEM: RESISTOR, 5.1K 1/4W (TO MDM OF3)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST & CONT ASSY #3
- 3) ESS BUS 3AB
- 4) RESISTOR, 5.1K 1/4W (TO MDM OF3)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A37A1R4
PART NUMBER: RLR07C512GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:
THIS MEASUREMENT IS NOT CRITICAL TO VEHICLE OPERATION.

REFERENCES: 76BV12G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6288 ABORT: 3/3

ITEM: RESISTOR, 5.1K 1/4W (TO MDM OF3)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST & CONT ASSY #3
- 3) ESS BUS 3AB
- 4) RESISTOR, 5.1K 1/4W (TO MDM OF3)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A37A1R5
PART NUMBER: RLR07C512GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS MEASUREMENT IS NOT CRITICAL TO VEHICLE OPERATION.

REFERENCES: 76BV12G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6289 ABORT: 3/3

ITEM: RESISTOR, 2.2K 1/4W
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) 013 PANEL
- 3) R1A1 PANEL
- 4) INV DIST & CONT ASSY #3
- 5) RESISTOR, 2.2K 1/4W TO MDM OF3
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A37A1R6
PART NUMBER: RLR20C222GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:
THIS IS A NON-CRITICAL MONITORING CIRCUIT.

REFERENCES: 76BV19C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6290 ABORT: 3/3

ITEM: RESISTOR, 1.8K 1/4W (TO MDM OF3)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST CONT & ASSY #3
- 3) AC OVER/UNDER VOLT SNSR #3
- 4) RESISTOR, 1.8K 1/4W (TO MDM OF3)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		
	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A37A1R7
PART NUMBER: RLR07C182GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS BLEED-OFF RESISTOR IS PART OF A MONITORING FUNCTION AND IS NOT CRITICAL FOR VEHICLE OPERATION.

REFERENCES: 76BV20C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6291 ABORT: 3/3

ITEM: RESISTOR, 1.8K 1/4W (TO MDM OF3)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST CONT & ASSY #3
- 3) AC OVER/UNDER VOLT SNSR #3
- 4) RESISTOR, 1.8K 1/4W (TO MDM OF3)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A37A1R8
PART NUMBER: RLR07C182GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS BLEED-OFF RESISTOR IS PART OF A MONITORING FUNCTION AND IS NOT CRITICAL FOR VEHICLE OPERATION.

REFERENCES: 76BV20C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6292 ABORT: 3/3

ITEM: RESISTOR, 2.2K 1/4W
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) 013 PANEL
- 3) R1A1 PANEL
- 4) INV DIST & CONT ASSY #3
- 5) RESISTOR, 2.2K 1/4W TO MDM OF3
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A37A1R9
PART NUMBER: RLR20C222GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A NON-CRITICAL MONITORING CIRCUIT.

REFERENCES: 76BV19C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6293 ABORT: 3/3

ITEM: RESISTOR, 100K (AC BUS 3 A CURRENT)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE PWR MONITOR
- 2) INV DIST & CONT ASSY #3
- 3) RESISTOR, 100K (AC BUS 3 A CURRENT)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A37A1R10
PART NUMBER: RLR05C1003GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A NON-CRITICAL GSE MEASUREMENT THAT IS NOT USED DURING FLIGHT.

REFERENCES: 76BV13E

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6294 ABORT: 3/3

ITEM: RESISTOR, 100K (AC BUS 3 B CURRENT)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE PWR MONITOR
- 2) INV DIST & CONT ASSY #3
- 3) RESISTOR, 100K (AC BUS 3 B CURRENT)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A37A3R11
PART NUMBER: RLR05C1003GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A NON-CRITICAL GSE MEASUREMENT THAT IS NOT USED DURING FLIGHT.

REFERENCES: 76BV13D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6295 ABORT: 3/3

ITEM: RESISTOR, 100K (AC BUS 3 C CURRENT)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE PWR MONITOR
- 2) INV DIST & CONT ASSY #3
- 3) RESISTOR, 100K (AC BUS 3 C CURRENT)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A37A3R12
PART NUMBER: RLR05C1003GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A NON-CRITICAL GSE MEASUREMENT THAT IS NOT USED DURING FLIGHT.

REFERENCES: 76BV13B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6296 ABORT: 3/3

ITEM: RESISTOR, 150K 1/2W (AC BUS 3 A VOLTAGE)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE PWR MONITOR
- 2) INV DIST & CONT ASSY #3
- 3) RESISTOR, 150K 1/2W (AC BUS 3 A VOLTAGE)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A37A1R13

PART NUMBER: RLR20C154GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A GSE MEASUREMENT THAT IS NOT CRITICAL DURING FLIGHT.

REFERENCES: 76BV10E

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6297 ABORT: 3/3

ITEM: RESISTOR, 150K 1/2W (AC BUS 3 B VOLTAGE)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE PWR MONITOR
- 2) INV DIST & CONT ASSY #3
- 3) RESISTOR, 150K 1/2W (AC BUS 3 B VOLTAGE)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A37A1R14
PART NUMBER: RLR20C154GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A GSE MEASUREMENT THAT IS NOT CRITICAL DURING FLIGHT.

REFERENCES: 76BV10D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6298 ABORT: 3/3

ITEM: RESISTOR, 150K 1/2W (AC BUS 3 C VOLTAGE)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE PWR MONITOR
- 2) INV DIST & CONT ASSY #3
- 3) RESISTOR, 150K 1/2W (AC BUS 3 C VOLTAGE)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A37A1R15
PART NUMBER: RLR20C154GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A GSE MEASUREMENT THAT IS NOT CRITICAL DURING FLIGHT.

REFERENCES: 76BV10B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6299 ABORT: 3/3

ITEM: RESISTOR, 4.3K 1/8W (AC BUS 3 A VOLTAGE)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE PWR MONITOR
- 2) INV DIST & CONT ASSY #3
- 3) RESISTOR, 4.3K 1/8W (AC BUS 3 A VOLTAGE)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A37A1R16
PART NUMBER: RLR05C432GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A GSE MEASUREMENT THAT IS NOT CRITICAL DURING FLIGHT.

REFERENCES: 76BV9A

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6300 ABORT: 3/3

ITEM: RESISTOR, 4.3K 1/8W (AC BUS 3 B VOLTAGE)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE PWR MONITOR
- 2) INV DIST & CONT ASSY #3
- 3) RESISTOR, 4.3K 1/8W (AC BUS 3 B VOLTAGE)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		
	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A37A1R17
PART NUMBER: RLR05C432GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A GSE MEASUREMENT THAT IS NOT CRITICAL DURING FLIGHT.

REFERENCES: 76BV9A

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6301 ABORT: 3/3

ITEM: RESISTOR, 4.3K 1/8W (AC BUS 3 C VOLTAGE)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE PWR MONITOR
- 2) INV DIST & CONT ASSY #3
- 3) RESISTOR, 4.3K 1/8W (AC BUS 3 C VOLTAGE)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A37A1R18
PART NUMBER: RLR05C432GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A GSE MEASUREMENT THAT IS NOT CRITICAL DURING FLIGHT.

REFERENCES: 76BV9A

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6302 ABORT: 3/1R

ITEM: FUSE, 3A TO AC BUS 3 A
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST CONT ASSY #3
- 3) AC O/V VOLT SNSR 3
- 4) FUSE, 3A TO AC BUS 3 A
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 83V76A37F1
PART NUMBER: ME451-0009-1003

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

IF THE AC BUS SENSOR SWITCH IS IN "AUTO", THIS FAILURE WOULD CAUSE THE LOSS OF ONE PHASE OF THE THREE PHASE AC BUS. LOSS OF ALL REDUNDANCY COULD CAUSE LOSS OF CREW/VEHICLE DUE TO LOSS OF POWER TO CRITICAL LOADS.

REFERENCES: 76BV9E

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6303 ABORT: 3/1R

ITEM: FUSE, 3A TO AC BUS 3 B
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST CONT ASSY #3
- 3) AC O/V VOLT SNSR 3
- 4) FUSE, 3A TO AC BUS 3 B
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 83V76A37F2
PART NUMBER: ME451-0009-1003

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

IF THE AC BUS SENSOR SWITCH IS IN "AUTO", THIS FAILURE WOULD CAUSE THE LOSS OF ONE PHASE OF THE THREE PHASE AC BUS. LOSS OF ALL REDUNDANCY COULD CAUSE LOSS OF CREW/VEHICLE DUE TO LOSS OF POWER TO CRITICAL LOADS.

REFERENCES: 76BV9D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6304 ABORT: 3/1R

ITEM: FUSE, 3A TO AC BUS 3 C
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST CONT ASSY #3
- 3) AC O/V VOLT SNSR 3
- 4) FUSE, 3A TO AC BUS 3 C
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	HDW/FUNC	CRITICALITIES ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 83V76A37F3
PART NUMBER: ME451-0009-1003

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

IF THE AC BUS SENSOR SWITCH IS IN "AUTO", THIS FAILURE WOULD CAUSE THE LOSS OF ONE PHASE OF THE THREE PHASE AC BUS. LOSS OF ALL REDUNDANCY COULD CAUSE LOSS OF CREW/VEHICLE DUE TO LOSS OF POWER TO CRITICAL LOADS.

REFERENCES: 76BV9B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6305 ABORT: 3/3

ITEM: FUSE, 3A TO AC VOLTMETER
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST CONT ASSY #3
- 3) FUSE, 3A TO AC VOLTMETER
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A37F4
PART NUMBER: MC451-0009-1003

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FUSE CONNECTS TO A NON-CRITICAL MEASUREMENT CIRCUIT.
ALTERNATE MEASUREMENTS ARE AVAILABLE TO THE CREW. NO EFFECT ON
CREW/MISSION/VEHICLE.

REFERENCES: 76BV9E

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6306 ABORT: 3/3

ITEM: FUSE, 3A TO AC VOLTMETER
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST CONT ASSY #3
- 3) FUSE, 3A TO AC VOLTMETER
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A37F5
PART NUMBER: MC451-0009-1003

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FUSE CONNECTS TO A NON-CRITICAL MEASUREMENT CIRCUIT.
ALTERNATE MEASUREMENTS ARE AVAILABLE TO THE CREW. NO EFFECT ON
CREW/MISSION/VEHICLE.

REFERENCES: 76BV9C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6307 ABORT: 3/3

ITEM: FUSE, 3A TO AC VOLTMETER
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST CONT ASSY #3
- 3) FUSE, 3A TO AC VOLTMETER
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A37F6
PART NUMBER: MC451-0009-1003

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FUSE CONNECTS TO A NON-CRITICAL MEASUREMENT CIRCUIT.
ALTERNATE MEASUREMENTS ARE AVAILABLE TO THE CREW. NO EFFECT ON
CREW/MISSION/VEHICLE.

REFERENCES: 76BV9B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6308 ABORT: 3/1R

ITEM: RELAY, LATCHING TO AC BUS 3A
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST CONT ASSY #3
- 3) RELAY, LATCHING TO AC BUS 3A
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 83V76A37K1
PART NUMBER: MC451-0122-0001(?)

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF ONE PHASE OF THE THREE PHASE
AC BUS. REDUNDANT BUSES WOULD PROVIDE POWER TO CRITICAL LOADS.
LOSS OF ALL REDUNDANCY COULD CAUSE LOSS OF CREW/VEHICLE DUE TO
LOSS OF POWER TO CRITICAL LOADS.

REFERENCES: 76BV11

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6309 ABORT: 3/3

ITEM: RELAY, LATCHING TO AC BUS 3A
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST CONT ASSY #3
- 3) RELAY, LATCHING TO AC BUS 3A
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A37K1
PART NUMBER: MC451-0122-0001(?)

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE INABILITY TO DISCONNECT THE PHASE
FROM THE AC BUS. NO EFFECT ON CREW/VEHICLE/MISSION AS THIS RELAY
IS NORMALLY CLOSED DURING FLIGHT OPERATIONS.

REFERENCES: 76BV11

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6310 ABORT: 3/1R

ITEM: RELAY, LATCHING TO AC BUS 3B
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST CONT ASSY #3
- 3) RELAY, LATCHING TO AC BUS 3B
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 83V76A37K2
PART NUMBER: MC451-0122-0001(?)

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF ONE PHASE OF THE THREE PHASE
AC BUS. REDUNDANT BUSES WOULD PROVIDE POWER TO CRITICAL LOADS.
LOSS OF ALL REDUNDANCY COULD CAUSE LOSS OF CREW/VEHICLE DUE TO
LOSS OF POWER TO CRITICAL LOADS.

REFERENCES: 76BV11

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6311 ABORT: 3/3

ITEM: RELAY, LATCHING TO AC BUS 3B
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST CONT ASSY #3
- 3) RELAY, LATCHING TO AC BUS 3B
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A37K2
PART NUMBER: MC451-0122-0001(?)

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE INABILITY TO DISCONNECT THE PHASE
FROM THE AC BUS. NO EFFECT ON CREW/VEHICLE/MISSION AS THIS RELAY
IS NORMALLY CLOSED DURING FLIGHT OPERATIONS.

REFERENCES: 76BV11

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6312 ABORT: 3/1R

ITEM: RELAY, LATCHING TO AC BUS 3C
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST CONT ASSY #3
- 3) RELAY, LATCHING TO AC BUS 3C
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 83V76A37K3
PART NUMBER: MC451-0122-0001(?)

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF ONE PHASE OF THE THREE PHASE AC BUS. REDUNDANT BUSES WOULD PROVIDE POWER TO CRITICAL LOADS. LOSS OF ALL REDUNDANCY COULD CAUSE LOSS OF CREW/VEHICLE DUE TO LOSS OF POWER TO CRITICAL LOADS.

REFERENCES: 76BV11

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6313 ABORT: 3/3

ITEM: RELAY, LATCHING TO AC BUS 3C
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST CONT ASSY #3
- 3) RELAY, LATCHING TO AC BUS 3C
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A37K3
PART NUMBER: MC451-0122-0001(?)

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE INABILITY TO DISCONNECT THE PHASE
FROM THE AC BUS. NO EFFECT ON CREW/VEHICLE/MISSION AS THIS RELAY
IS NORMALLY CLOSED DURING FLIGHT OPERATIONS.

REFERENCES: 76BV11

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6314

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

ITEM: CIRCUIT BREAKER, 3A 3-P
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER

SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS #3
- 2) INV DIST & CONT ASSY #3
- 3) L4 PANEL
- 4) CIRCUIT BREAKER, 3P 3A TO AC UTIL POWER
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 31V73A4CB29
PART NUMBER: MC454-0032-3030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS ITEM PROVIDES POWER AND CIRCUIT PROTECTION TO AN AC UTILITY
OUTLET. THIS FAILURE WOULD HAVE NO EFFECT ON
CREW/MISSION/VEHICLE.

REFERENCES: 76BW15G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6315 ABORT: 3/3

ITEM: CIRCUIT BREAKER, 3A 3-P
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS #3
- 2) INV DIST & CONT ASSY #3
- 3) L4 PANEL
- 4) CIRCUIT BREAKER, 3P 3A TO AC UTIL POWER
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 31V73A4CB29
PART NUMBER: MC454-0032-3030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS ITEM PROVIDES POWER AND CIRCUIT PROTECTION TO AN AC UTILITY
OUTLET. THIS FAILURE WOULD HAVE NO EFFECT ON
CREW/MISSION/VEHICLE.

REFERENCES: 76BW15G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6316 ABORT: 3/3

ITEM: CIRCUIT BREAKER, 3A 3-P
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS #3
- 2) INV DIST & CONT ASSY #3
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER, 3P 3A TO PAYLOAD
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 85V73A129CB16
PART NUMBER: MC454-0032-3030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS ITEM PROVIDES POWER AND CIRCUIT PROTECTION TO A PAYLOAD
PATCH PANEL. THIS FAILURE WOULD HAVE NO EFFECT ON
CREW/MISSION/VEHICLE.

REFERENCES: 76BW9C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6317 ABORT: 3/3

ITEM: CIRCUIT BREAKER, 3A 3-P
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS #3
- 2) INV DIST & CONT ASSY #3
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER, 3P 3A TO PAYLOAD
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 85V73A129CB16
PART NUMBER: MC454-0032-3030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS ITEM PROVIDES POWER AND CIRCUIT PROTECTION TO A PAYLOAD
PATCH PANEL. THIS FAILURE WOULD HAVE NO EFFECT ON
CREW/MISSION/VEHICLE.

REFERENCES: 76BW9C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6318 ABORT: 3/3

ITEM: SWITCH, TOGGLE 3PDT (AC BUS 3 UTIL PWR)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS #3
- 2) INV & DIST CONT ASSY #3
- 3) L4 PANEL
- 4) A15 PANEL
- 5) SWITCH, TOGGLE 3PDT (AC BUS 3 UTIL PWR)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 36V73A15S3
PART NUMBER: ME452-0102-7303

CAUSES: PIECE-PART STRUCTURAL FAILURE, VIBRATION, CONTAMINATION,
MECH SHOCK

EFFECTS/RATIONALE:

THIS SWITCH CONTROLS A NON-CRITICAL AC UTILITY POWER OUTLET. NO
EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BW15D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6319 ABORT: 3/3

ITEM: SWITCH, TOGGLE 3PDT (AC BUS 3 UTIL PWR)
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS #3
- 2) INV & DIST CONT ASSY #3
- 3) L4 PANEL
- 4) A15 PANEL
- 5) SWITCH, TOGGLE 3PDT (AC BUS 3 UTIL PWR)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 36V73A15S3
PART NUMBER: ME452-0102-7303

CAUSES: PIECE-PART STRUCTURAL FAILURE, VIBRATION, CONTAMINATION,
MECH SHOCK

EFFECTS/RATIONALE:
THIS SWITCH CONTROLS A NON-CRITICAL AC UTILITY POWER OUTLET. NO
EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BW15D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6320 ABORT: 3/3

ITEM: SWITCH, TOGGLE 3PDT (AC BUS 3 UTIL PWR)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS #3
- 2) INV & DIST CONT ASSY #3
- 3) L4 PANEL
- 4) A15 PANEL
- 5) M013Q PANEL
- 6) SWITCH, TOGGLE 3PDT (AC BUS 3 UTIL PWR)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 80V73A81S12
PART NUMBER: ME452-0102-7303

CAUSES: PIECE-PART STRUCTURAL FAILURE, VIBRATION, CONTAMINATION,
MECH SHOCK

EFFECTS/RATIONALE:

THIS SWITCH CONTROLS A NON-CRITICAL AC UTILITY POWER OUTLET. NO
EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BW15B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6321 ABORT: 3/3

ITEM: SWITCH, TOGGLE 3PDT (AC BUS 3 UTIL PWR)
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS #3
- 2) INV & DIST CONT ASSY #3
- 3) L4 PANEL
- 4) A15 PANEL
- 5) M013Q PANEL
- 6) SWITCH, TOGGLE 3PDT (AC BUS 3 UTIL PWR)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES	
	HDW/FUNC	ABORT
PRELAUNCH:	3/3	RTLS: 3/3
LIFTOFF:	3/3	TAL: 3/3
ONORBIT:	3/3	AOA: 3/3
DEORBIT:	3/3	ATO: 3/3
LANDING/SAFING:	3/3	

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 80V73A81S12
PART NUMBER: ME452-0102-7303

CAUSES: PIECE-PART STRUCTURAL FAILURE, VIBRATION, CONTAMINATION,
MECH SHOCK

EFFECTS/RATIONALE:

THIS SWITCH CONTROLS A NON-CRITICAL AC UTILITY POWER OUTLET. NO
EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BW15B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6322 ABORT: 3/1R

ITEM: CIRCUIT BREAKER AC 3A TO RCS/OMS-3
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST & CONT ASSY #3
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER AC 3A TO RCS/OMS-3
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [11] B [P] C [P]

LOCATION: 85V73A129CB44
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE PHASE OF THE THREE PHASE AC
RCS/OMS BUS. LOSS OF ALL REDUNDANCY WOULD CAUSE LOSS OF
CREW/VEHICLE DUE TO INABILITY TO CONTROL ISOLATION VALVES AND
MANIFOLDS DURING A CROSSFEED SITUATION WHERE THE PROP TANKS ARE
ISOLATED.

REFERENCES: 76BY23C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6323 ABORT: 3/3

ITEM: CIRCUIT BREAKER AC 3A TO RCS/OMS-3
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST & CONT ASSY #3
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER AC 3A TO RCS/OMS-3
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 85V73A129CB44
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:
THIS FAILURE WOULD HAVE NO EFFECT AS THIS IS NORMAL FLIGHT
CONFIGURATION.

REFERENCES: 76BY23C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6324 ABORT: 3/1R

ITEM: CIRCUIT BREAKER AC 3B TO RCS/OMS-3
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST & CONT ASSY #3
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER AC 3B TO RCS/OMS-3
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 85V73A129CB45
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE PHASE OF THE THREE PHASE AC
RCS/OMS BUS. LOSS OF ALL REDUNDANCY WOULD CAUSE LOSS OF
CREW/VEHICLE DUE TO INABILITY TO CONTROL ISOLATION VALVES AND
MANIFOLDS DURING A CROSSFEED SITUATION WHERE THE PROP TANKS ARE
ISOLATED.

REFERENCES: 76BY23B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6325 ABORT: 3/3

ITEM: CIRCUIT BREAKER AC 3B TO RCS/OMS-3
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST & CONT ASSY #3
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER AC 3B TO RCS/OMS-3
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 85V73A129CB45
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT AS THIS IS NORMAL FLIGHT
CONFIGURATION.

REFERENCES: 76BY23B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6326 ABORT: 3/1R

ITEM: CIRCUIT BREAKER AC 3C TO RCS/OMS-3
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST & CONT ASSY #3
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER AC 3C TO RCS/OMS-3
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [11] B [P] C [P]

LOCATION: 85V73A129CB46
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE PHASE OF THE THREE PHASE AC
RCS/OMS BUS. LOSS OF ALL REDUNDANCY WOULD CAUSE LOSS OF
CREW/VEHICLE DUE TO INABILITY TO CONTROL ISOLATION VALVES AND
MANIFOLDS DURING A CROSSFEED SITUATION WHERE THE PROP TANKS ARE
ISOLATED.

REFERENCES: 76BY23B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6327 ABORT: 3/3

ITEM: CIRCUIT BREAKER AC 3C TO RCS/OMS-3
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST & CONT ASSY #3
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER AC 3C TO RCS/OMS-3
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 85V73A129CB46
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:
THIS FAILURE WOULD HAVE NO EFFECT AS THIS IS NORMAL FLIGHT
CONFIGURATION.

REFERENCES: 76BY23B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 2/1R
MDAC ID: 6328 ABORT: 2/1R

ITEM: CIRCUIT BREAKER TO FMCA-3
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST & CONT ASSY #3
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER TO FMCA-3
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	2/1R
LIFTOFF:	3/3	TAL:	2/1R
ONORBIT:	2/1R	AOA:	2/1R
DEORBIT:	2/1R	ATO:	2/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 85V73A129CB11
PART NUMBER: MC454-0032-3030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE OF TWO REDUNDANT AC POWER SOURCES TO DOOR MOTORS. SECOND FAILURE WOULD LOSE ALL POWER TO THESE MOTORS. LOSS OF CREW/VEHICLE IS LIKELY DUE TO STRUCTURAL DAMAGE ON ENTRY, IF DOORS CANNOT BE OPERATED.

REFERENCES: 76BY22G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6329 ABORT: 3/3

ITEM: CIRCUIT BREAKER TO FMCA-3
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST & CONT ASSY #3
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER TO FMCA-3
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 85V73A129CB11
PART NUMBER: MC454-0032-3030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE HAS NO EFFECT AS THIS IS THE NORMAL FLIGHT
CONFIGURATION.

REFERENCES: 76BY22G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 2/1R
MDAC ID: 6330 ABORT: 2/1R

ITEM: CIRCUIT BREAKER TO MMCA-2
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST & CONT ASSY #3
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER TO MMCA-2
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	2/1R
LIFTOFF:	3/3	TAL:	2/1R
ONORBIT:	2/1R	AOA:	2/1R
DEORBIT:	2/1R	ATO:	2/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 85V73A129CB12
PART NUMBER: MC454-0032-3030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE OF TWO REDUNDANT AC POWER SOURCES TO DOOR MOTORS. SECOND FAILURE WOULD CAUSE LOSS OF ALL POWER TO THESE MOTORS. LOSS OF CREW/VEHICLE IS LIKELY DUE TO STRUCTURAL

DAMAGE ON ENTRY, IF DOORS CANNOT BE OPERATED. AFTER SECOND FAILURE, CREW EVA REQUIRED TO CLOSE AND LATCH PAYLOAD BAY DOORS AND LATCHES.

REFERENCES: 76BY22G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6331 ABORT: 3/3

ITEM: CIRCUIT BREAKER TO MMCA-2
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST & CONT ASSY #3
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER TO MMCA-2
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 85V73A129CB12
PART NUMBER: MC454-0032-3030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE HAS NO EFFECT AS THIS IS THE NORMAL FLIGHT
CONFIGURATION.

REFERENCES: 76BY22G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 2/1R
MDAC ID: 6332 ABORT: 2/1R

ITEM: CIRCUIT BREAKER TO MMCA-4
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST & CONT ASSY #3
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER TO MMCA-4
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	2/1R
LIFTOFF:	3/3	TAL:	2/1R
ONORBIT:	2/1R	AOA:	2/1R
DEORBIT:	2/1R	ATO:	2/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 85V73A129CB13
PART NUMBER: MC454-0032-3030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE OF TWO REDUNDANT AC POWER SOURCES TO DOOR MOTORS. SECOND FAILURE WOULD CAUSE LOSS OF ALL POWER TO THESE MOTORS. LOSS OF CREW/VEHICLE IS LIKELY DUE TO STRUCTURAL DAMAGE ON ENTRY, IF DOORS CANNOT BE OPERATED. AFTER SECOND FAILURE, CREW EVA REQUIRED TO CLOSE AND LATCH PAYLOAD BAY DOORS AND LATCHES.

REFERENCES: 76BY22D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6333 ABORT: 3/3

ITEM: CIRCUIT BREAKER TO MMCA-4
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST & CONT ASSY #3
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER TO MMCA-4
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	HDW/FUNC	CRITICALITIES	ABORT	HDW/FUNC
PRELAUNCH:	3/3		RTLS:	3/3
LIFTOFF:	3/3		TAL:	3/3
ONORBIT:	3/3		AOA:	3/3
DEORBIT:	3/3		ATO:	3/3
LANDING/SAFING:	3/3			

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 85V73A129CB13
PART NUMBER: MC454-0032-3030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE HAS NO EFFECT AS THIS IS THE NORMAL FLIGHT
CONFIGURATION.

REFERENCES: 76BY22D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 2/1R
MDAC ID: 6334 ABORT: 2/1R

ITEM: CIRCUIT BREAKER TO AMCA-3
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST & CONT ASSY #3
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER TO AMCA-3
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	2/1R
LIFTOFF:	3/3	TAL:	2/1R
ONORBIT:	2/1R	AOA:	2/1R
DEORBIT:	2/1R	ATO:	2/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 85V73A129CB14
PART NUMBER: MC454-0032-3030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE OF TWO REDUNDANT AC POWER SOURCES TO DOOR MOTORS. SECOND FAILURE WOULD CAUSE LOSS OF ALL POWER TO THESE MOTORS. LOSS OF CREW/VEHICLE IS LIKELY DUE TO STRUCTURAL DAMAGE ON ENTRY, IF DOORS CANNOT BE OPERATED.

REFERENCES: 76BY22H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6335 ABORT: 3/3

ITEM: CIRCUIT BREAKER TO AMCA-3
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST & CONT ASSY #3
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER TO AMCA-3
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 85V73A129CB14
PART NUMBER: MC454-0032-3030

CAUSES: CONTAMINATION, PIECE PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:
THIS FAILURE HAS NO EFFECT AS THIS IS THE NORMAL FLIGHT
CONFIGURATION.

REFERENCES: 76BY22H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 2/1R
MDAC ID: 6336 ABORT: 2/1R

ITEM: RELAY TO PLBD AC3
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST & CONT ASSY #3
- 3) MA73C PANEL
- 4) MMCA-2
- 5) RELAY TO PLBD AC3
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	2/1R	AOA:	3/3
DEORBIT:	3/3	ATO:	2/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 40V76A118K42
PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT AC POWER TO THE
PAYLOAD BAY DOOR MOTORS. SECOND FAILURE IN THE REDUNDANT POWER
SOURCE WOULD PREVENT CLOSING THE PAYLOAD BAY DOORS PRIOR TO
ENTRY.

REFERENCES: 76BY14F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6337 ABORT: 3/1R

ITEM: RELAY TO PLBD AC3
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST & CONT ASSY #3
- 3) MA73C PANEL
- 4) MMCA-2
- 5) RELAY TO PLBD AC3
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 40V76A118K42
PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANCY TO PREVENT PREMATURE
POWER TO THE P/L BAY DOORS. IF POWER WERE APPLIED PREMATURELY
(MULTIPLE FAILURES), THE CREW/VEHICLE COULD BE LOST DUE TO
PREMATURE OPENING OR CLOSING THE P/L BAY DOORS.

REFERENCES: 76BY14F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 2/1R
MDAC ID: 6338 ABORT: 2/1R

ITEM: RELAY TO PLBD AC3
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST & CONT ASSY #3
- 3) MA73C PANEL
- 4) MMCA-2
- 5) RELAY TO PLBD AC3
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	2/1R	AOA:	3/3
DEORBIT:	3/3	ATO:	2/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 40V76A118K54
PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT AC POWER TO THE
PAYLOAD BAY DOOR MOTORS. SECOND FAILURE IN THE REDUNDANT POWER
SOURCE WOULD PREVENT CLOSING THE PAYLOAD BAY DOORS PRIOR TO
ENTRY.

REFERENCES: 76BY14F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6339 ABORT: 3/1R

ITEM: RELAY TO PLBD AC3
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST & CONT ASSY #3
- 3) MA73C PANEL
- 4) MMCA-2
- 5) RELAY TO PLBD AC3
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 40V76A118K54
PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANCY TO PREVENT PREMATURE
POWER TO THE P/L BAY DOORS. IF POWER WERE APPLIED PREMATURELY
(MULTIPLE FAILURES), THE CREW/VEHICLE COULD BE LOST DUE TO
PREMATURE OPENING OR CLOSING THE P/L BAY DOORS.

REFERENCES: 76BY14F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 2/1R
MDAC ID: 6340 ABORT: 2/1R

ITEM: RELAY TO PLBD AC3
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST & CONT ASSY #3
- 3) MA73C PANEL
- 4) MMCA-4
- 5) RELAY TO PLBD AC3
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	2/1R	AOA:	3/3
DEORBIT:	3/3	ATO:	2/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 40V76A120K8
PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT AC POWER TO THE
PAYLOAD BAY DOOR MOTORS. SECOND FAILURE IN THE REDUNDANT POWER
SOURCE WOULD PREVENT CLOSING THE PAYLOAD BAY DOORS PRIOR TO
ENTRY.

REFERENCES: 76BY16C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6341 ABORT: 3/1R

ITEM: RELAY TO PLBD AC3
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST & CONT ASSY #3
- 3) MA73C PANEL
- 4) MMCA-4
- 5) RELAY TO PLBD AC3
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 40V76A120K8
PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANCY TO PREVENT PREMATURE
POWER TO THE P/L BAY DOORS. IF POWER WERE APPLIED PREMATURELY
(MULTIPLE FAILURES), THE CREW/VEHICLE COULD BE LOST DUE TO
PREMATURE OPENING OR CLOSING THE P/L BAY DOORS.

REFERENCES: 76BY16C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 2/1R
MDAC ID: 6342 ABORT: 2/1R

ITEM: RELAY TO PLBD AC3
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST & CONT ASSY #3
- 3) MA73C PANEL
- 4) MMCA-4
- 5) RELAY TO PLBD AC3
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	2/1R	AOA:	3/3
DEORBIT:	3/3	ATO:	2/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 40V76A120K20
PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT AC POWER TO THE
PAYLOAD BAY DOOR MOTORS. SECOND FAILURE IN THE REDUNDANT POWER
SOURCE WOULD PREVENT CLOSING THE PAYLOAD BAY DOORS PRIOR TO
ENTRY.

REFERENCES: 76BY16C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6343 ABORT: 3/1R

ITEM: RELAY TO PLBD AC3
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST & CONT ASSY #3
- 3) MA73C PANEL
- 4) MMCA-4
- 5) RELAY TO PLBD AC3
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 40V76A120K20
PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANCY TO PREVENT PREMATURE POWER TO THE P/L BAY DOORS. IF POWER WERE APPLIED PREMATURELY (MULTIPLE FAILURES), THE CREW/VEHICLE COULD BE LOST DUE TO PREMATURE OPENING OR CLOSING THE P/L BAY DOORS.

REFERENCES: 76BY16C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 2/1R
MDAC ID: 6344 ABORT: 2/1R

ITEM: RELAY, 4P TO PLBM-AC3
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST & CONT ASSY #3
- 3) MA73C PANEL
- 4) MMCA-4
- 5) RELAY, 4P TO PLBM-AC3
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	2/1R	AOA:	3/3
DEORBIT:	3/3	ATO:	2/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 40V76A120K30
PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE POWER SOURCE TO DUAL
REDUNDANT POWERED FUNCTIONS. SECOND FAILURE COULD MAKE THESE
FUNCTIONS (PAYLOAD BAY DOOR LATCHES) INOPERATIVE. THIS IS VERY
LIKELY TO CAUSE LOSS OF CREW/VEHICLE ON ENTRY.

REFERENCES: 76BY15C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6345 ABORT: 3/1R

ITEM: RELAY, 4P TO PLBM-AC3
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST & CONT ASSY #3
- 3) MA73C PANEL
- 4) MMCA-4
- 5) RELAY, 4P TO PLBM-AC3
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 40V76A120K30
PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD REMOVE REDUNDANT PROTECTION FROM
INADVERTENTLY POWERING A PAYLOAD BUS. SECOND FAILURE IN THE SAME
CIRCUIT WOULD SUPPLY POWER TO CERTAIN PAYLOAD LOADS. THIRD
FAILURE IN THE LOAD MAY PREMATURELY CAUSE AN ACTION THAT COULD
CAUSE LOSS OF CREW/VEHICLE.

REFERENCES: 76BY15C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 2/1R
MDAC ID: 6346 ABORT: 2/1R

ITEM: RELAY, 4P TO PLBM-AC3
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST & CONT ASSY #3
- 3) MA73C PANEL
- 4) MMCA-4
- 5) RELAY, 4P TO PLBM-AC3
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	2/1R	AOA:	3/3
DEORBIT:	3/3	ATO:	2/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 40V76A120K42
PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE POWER SOURCE TO DUAL
REDUNDANT POWERED FUNCTIONS. SECOND FAILURE COULD MAKE THESE
FUNCTIONS (PAYLOAD BAY DOOR LATCHES) INOPERATIVE. THIS IS VERY
LIKELY TO CAUSE LOSS OF CREW/VEHICLE ON ENTRY.

REFERENCES: 76BY15C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6347 ABORT: 3/1R

ITEM: RELAY, 4P TO PLBM-AC3
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST & CONT ASSY #3
- 3) MA73C PANEL
- 4) MMCA-4
- 5) RELAY, 4P TO PLBM-AC3
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 40V76A120K42
PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD REMOVE REDUNDANT PROTECTION FROM
INADVERTENTLY POWERING A PAYLOAD BUS. SECOND FAILURE IN THE SAME
CIRCUIT WOULD SUPPLY POWER TO CERTAIN PAYLOAD LOADS. THIRD
FAILURE IN THE LOAD MAY PREMATURELY CAUSE AN ACTION THAT COULD
CAUSE LOSS OF CREW/VEHICLE.

REFERENCES: 76BY15C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 2/1R
MDAC ID: 6348 ABORT: 2/1R

ITEM: RELAY, 4P TO PLBM-AC3
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST & CONT ASSY #3
- 3) MA73C PANEL
- 4) MMCA-2
- 5) RELAY, 4P TO PLBM-AC3
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	2/1R	AOA:	3/3
DEORBIT:	3/3	ATO:	2/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 40V76A118K61
PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE POWER SOURCE TO DUAL
REDUNDANT POWERED FUNCTIONS. SECOND FAILURE COULD MAKE THESE
FUNCTIONS (PAYLOAD BAY DOOR LATCHES) INOPERATIVE. THIS IS VERY
LIKELY TO CAUSE LOSS OF CREW/VEHICLE ON ENTRY.

REFERENCES: 76BZ2D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6349 ABORT: 3/1R

ITEM: RELAY, 4P TO PLBM-AC3
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST & CONT ASSY #3
- 3) MA73C PANEL
- 4) MMCA-2
- 5) RELAY, 4P TO PLBM-AC3
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 40V76A118K61
PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD REMOVE REDUNDANT PROTECTION FROM
INADVERTENTLY POWERING A PAYLOAD BUS. SECOND FAILURE IN THE SAME
CIRCUIT WOULD SUPPLY POWER TO CERTAIN PAYLOAD LOADS. THIRD
FAILURE IN THE LOAD MAY PREMATURELY CAUSE AN ACTION THAT COULD
CAUSE LOSS OF CREW/VEHICLE.

REFERENCES: 76BZ2D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 2/1R
MDAC ID: 6350 ABORT: 2/1R

ITEM: RELAY, 4P TO PLBM-AC3
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST & CONT ASSY #3
- 3) MA73C PANEL
- 4) MMCA-2
- 5) RELAY, 4P TO PLBM-AC3
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	2/1R	AOA:	3/3
DEORBIT:	3/3	ATO:	2/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 40V76A118K63
PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE POWER SOURCE TO DUAL
REDUNDANT POWERED FUNCTIONS. SECOND FAILURE COULD MAKE THESE
FUNCTIONS (PAYLOAD BAY DOOR LATCHES) INOPERATIVE. THIS IS VERY
LIKELY TO CAUSE LOSS OF CREW/VEHICLE ON ENTRY.

REFERENCES: 76BZ2E

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6351 ABORT: 3/1R

ITEM: RELAY, 4P TO PLBM-AC3
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS 3
- 2) INV DIST & CONT ASSY #3
- 3) MA73C PANEL
- 4) MMCA-2
- 5) RELAY, 4P TO PLBM-AC3
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 40V76A118K63
PART NUMBER: MC455-0129-0001

CAUSES: MECH SHOCK, PIECE PART STRUCTURAL FAILURE, VIBRATION,
CONTAMINATION

EFFECTS/RATIONALE:

FIRST FAILURE WOULD REMOVE REDUNDANT PROTECTION FROM
INADVERTENTLY POWERING A PAYLOAD BUS. SECOND FAILURE IN THE SAME
CIRCUIT WOULD SUPPLY POWER TO CERTAIN PAYLOAD LOADS. THIRD
FAILURE IN THE LOAD MAY PREMATURELY CAUSE AN ACTION THAT COULD
CAUSE LOSS OF CREW/VEHICLE.

REFERENCES: 76BZ2E

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6352 ABORT: 3/1R

ITEM: RESISTOR, 1.2K 2W (TO MEC #1)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONT BUS AB1
- 2) 017 PANEL
- 3) RESISTOR, 1.2K 2W (TO MEC #1)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/3	AOA:	3/1R
DEORBIT:	3/3	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 33V73A17A8R1
PART NUMBER: RWR80S1211FR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF REDUNDANT POWER TO ONE MEC.
THE LOSS OF ALL POWER TO BOTH MECS COULD CAUSE LOSS OF
VEHICLE/CREW DUE TO INABILITY TO SEPERATE THE ET AND SRBS.

REFERENCES: 76DA24G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6353 ABORT: 3/1R

ITEM: RESISTOR, 1.2K 2W (TO MEC #1)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONT BUS AB2
- 2) 017 PANEL
- 3) RESISTOR, 1.2K 2W (TO MEC #1)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/3	AOA:	3/1R
DEORBIT:	3/3	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 33V73A17A8R2
PART NUMBER: RWR80S1211FR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF REDUNDANT POWER TO ONE MEC.
THE LOSS OF ALL POWER TO BOTH MECS COULD CAUSE LOSS OF
VEHICLE/CREW DUE TO INABILITY TO SEPERATE THE ET AND SRBS.

REFERENCES: 76DA24C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6354 ABORT: 3/1R

ITEM: RESISTOR, 1.2K 2W (TO MEC #2)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONT BUS BC1
- 2) 017 PANEL
- 3) RESISTOR, 1.2K 2W (TO MEC #2)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/3	AOA:	3/1R
DEORBIT:	3/3	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 33V73A17A9R2
PART NUMBER: RWR80S1211FR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF REDUNDANT POWER TO ONE MEC.
THE LOSS OF ALL POWER TO BOTH MECS COULD CAUSE LOSS OF
VEHICLE/CREW DUE TO INABILITY TO SEPERATE THE ET AND SRBS.

REFERENCES: 76DA13G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6355 ABORT: 3/1R

ITEM: RESISTOR, 1.2K 2W (TO MEC #2)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONT BUS BC2
- 2) 017 PANEL
- 3) RESISTOR, 1.2K 2W (TO MEC #2)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/3	AOA:	3/1R
DEORBIT:	3/3	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 33V73A17A9R1
PART NUMBER: RWR80S1211FR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF REDUNDANT POWER TO ONE MEC.
THE LOSS OF ALL POWER TO BOTH MECS COULD CAUSE LOSS OF
VEHICLE/CREW DUE TO INABILITY TO SEPERATE THE ET AND SRBS.

REFERENCES: 76DA13C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6356 ABORT: 3/3

ITEM: SWITCH, TOGGLE DPDT (MEC 1)
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONTROL BUSES AB1 & AB2
- 2) 017 PANEL
- 3) SWITCH, TOGGLE DPDT (MEC 1)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 33V73A17S5
PART NUMBER: ME452-0102-7301

CAUSES: PIECE-PART STRUCTURAL FAILURE, CONTAMINATION, VIBRATION,
MECH SHOCK

EFFECTS/RATIONALE:
NO EFFECT AS THIS IS NORMAL FLIGHT CONFIGURATION.

REFERENCES: 76DA24

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6357 ABORT: 3/1R

ITEM: SWITCH, TOGGLE DPDT (MEC 1)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONTROL BUSES AB1 & AB2
- 2) 017 PANEL
- 3) SWITCH, TOGGLE DPDT (MEC 1)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/3	AOA:	3/1R
DEORBIT:	3/3	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 33V73A17S5
PART NUMBER: ME452-0102-7301

CAUSES: PIECE-PART STRUCTURAL FAILURE, CONTAMINATION, VIBRATION,
MECH SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE OF TWO POWER SOURCES TO ONE MEC. LOSS OF ALL POWER TO MECS DURING LIFTOFF OR ABORT PHASES WOULD LIKELY RESULT IN LOSS OF CREW/VEHICLE DUE TO INABILITY TO COMPLETE MEC FUNCTIONS.

REFERENCES: 76DA24

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6358 ABORT: 3/3

ITEM: SWITCH, TOGGLE DPDT (MEC 2)
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONTROL BUSES BC1 & BC2
- 2) 017 PANEL
- 3) SWITCH, TOGGLE DPDT (MEC 2)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 33V73A17S6
PART NUMBER: ME452-0102-7301

CAUSES: PIECE-PART STRUCTURAL FAILURE, CONTAMINATION, VIBRATION,
MECH SHOCK

EFFECTS/RATIONALE:
NO EFFECT AS THIS IS THE NORMAL FLIGHT CONFIGURATION.

REFERENCES: 76DA12

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6359 ABORT: 3/1R

ITEM: SWITCH, TOGGLE DPDT (MEC 2)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONTROL BUSES BC1 & BC2
- 2) 017 PANEL
- 3) SWITCH, TOGGLE DPDT (MEC 2)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/3	AOA:	3/1R
DEORBIT:	3/3	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 33V73A17S6
PART NUMBER: ME452-0102-7301

CAUSES: PIECE-PART STRUCTURAL FAILURE, CONTAMINATION, VIBRATION,
MECH SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE OF TWO POWER SOURCES TO ONE MEC. LOSS OF ALL POWER TO MECS DURING LIFTOFF OR ABORT PHASES WOULD LIKELY RESULT IN LOSS OF CREW/VEHICLE DUE TO INABILITY TO COMPLETE MEC FUNCTIONS.

REFERENCES: 76DA12

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6360 ABORT: 3/3

ITEM: RESISTOR, 5.1K 1/4W TO MDM OA1
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONT BUS AB1
- 2) 017 PANEL
- 3) APCA-1
- 4) RESISTOR, 5.1K 1/4W TO MDM OA1
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 54V76A131A1R4
PART NUMBER: RLR07C512GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A NON-CRITICAL MEASUREMENT CIRCUIT.

REFERENCES: 76DA21G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6361 ABORT: 3/3

ITEM: RESISTOR, 5.1K 1/4W TO MDM OA2
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONT BUS BC1
- 2) 017 PANEL
- 3) APCA-2
- 4) RESISTOR, 5.1K 1/4W TO MDM OA2
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 55V76A132A1R12
PART NUMBER: RLR07C512GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A NON-CRITICAL MEASUREMENT CIRCUIT.

REFERENCES: 76DA9G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6362 ABORT: 3/1R

ITEM: RPC, 10A TO MEC #2
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) MAIN DC DIST ASSY #2
- 3) APCA-5
- 4) APCA-2
- 5) RPC, 10A TO MEC #2
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/3	AOA:	3/1R
DEORBIT:	3/3	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 55V76A132RPC3
PART NUMBER: MC450-0017-1100 (?-2100)

CAUSES: PIECE PART STRUCTURAL FAILURE, CONTAMINATION, MECH
SHOCK, THERMAL STRESS, VIBRATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF ONE OF TWO POWER SOURCES TO ONE MEC. LOSS OF ALL REDUNDANCY COULD CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO POWER CRITICAL FUNCTIONS.

REFERENCES: 76DA9H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6363 ABORT: 3/3

ITEM: RPC, 10A TO MEC #2
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) MAIN DC DIST ASSY #2
- 3) APCA-5
- 4) APCA-2
- 5) RPC, 10A TO MEC #2
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 55V76A132RPC3
PART NUMBER: MC450-0017-1100 (?-2100)

CAUSES: PIECE PART STRUCTURAL FAILURE, CONTAMINATION, MECH
SHOCK, THERMAL STRESS, VIBRATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF RPC CONTROL TO ONE OF TWO
POWER SOURCES TO ONE MEC. NO EFFECT ON CREW/VEHICLE/MISSION AS
THIS IS THE NORMAL FLIGHT CONFIGURATION.

REFERENCES: 76DA9H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6364 ABORT: 3/1R

ITEM: RPC, 10A TO MEC #2
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) MAIN DC DIST ASSY #3
- 3) APCA-6
- 4) APCA-3
- 5) RPC, 10A TO MEC #2
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/3	AOA:	3/1R
DEORBIT:	3/3	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 56V76A133RPC5
PART NUMBER: MC450-0017-1100 (?-2100)

CAUSES: PIECE PART STRUCTURAL FAILURE, CONTAMINATION, MECH
SHOCK, THERMAL STRESS, VIBRATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF ONE OF TWO POWER SOURCES TO ONE MEC. LOSS OF ALL REDUNDANCY COULD CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO POWER CRITICAL FUNCTIONS.

REFERENCES: 76DA9D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6365 ABORT: 3/3

ITEM: RPC, 10A TO MEC #2
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) MAIN DC DIST ASSY #3
- 3) APCA-6
- 4) APCA-3
- 5) RPC, 10A TO MEC #2
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 56V76A133RPC5
PART NUMBER: MC450-0017-1100 (?-2100)

CAUSES: PIECE PART STRUCTURAL FAILURE, CONTAMINATION, MECH
SHOCK, THERMAL STRESS, VIBRATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF RPC CONTROL TO ONE OF TWO
POWER SOURCES TO ONE MEC. NO EFFECT ON CREW/VEHICLE/MISSION AS
THIS IS THE NORMAL FLIGHT CONFIGURATION.

REFERENCES: 76DA9D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6366 ABORT: 3/1R

ITEM: RPC, 10A TO MEC #1
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) MAIN DC DIST ASSY #2
- 3) APCA-5
- 4) APCA-2
- 5) RPC, 10A TO MEC #1
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/3	AOA:	3/1R
DEORBIT:	3/3	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 55V76A132RPC2
PART NUMBER: MC450-0017-1100 (?-2100)

CAUSES: PIECE PART STRUCTURAL FAILURE, CONTAMINATION, MECH
SHOCK, THERMAL STRESS, VIBRATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF ONE OF TWO POWER SOURCES TO ONE MEC. LOSS OF ALL REDUNDANCY COULD CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO POWER CRITICAL FUNCTIONS.

REFERENCES: 76DA20D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6367 ABORT: 3/3

ITEM: RPC, 10A TO MEC #1
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) MAIN DC DIST ASSY #2
- 3) APCA-5
- 4) APCA-2
- 5) RPC, 10A TO MEC #1
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 55V76A132RPC2
PART NUMBER: MC450-0017-1100 (?-2100)

CAUSES: PIECE PART STRUCTURAL FAILURE, CONTAMINATION, MECH
SHOCK, THERMAL STRESS, VIBRATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF RPC CONTROL TO ONE OF TWO
POWER SOURCES TO ONE MEC. NO EFFECT ON CREW/VEHICLE/MISSION AS
THIS IS THE NORMAL FLIGHT CONFIGURATION.

REFERENCES: 76DA20D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6368 ABORT: 3/1R

ITEM: RPC, 10A TO MEC #1
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS A
- 2) MAIN DC DIST ASSY #1
- 3) APCA-4
- 4) APCA-1
- 5) RPC, 10A TO MEC #1
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/3	AOA:	3/1R
DEORBIT:	3/3	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 54V76A131RPC5
PART NUMBER: MC450-0017-1100 (?-2100)

CAUSES: PIECE PART STRUCTURAL FAILURE, CONTAMINATION, MECH
SHOCK, THERMAL STRESS, VIBRATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF ONE OF TWO POWER SOURCES TO ONE MEC. LOSS OF ALL REDUNDANCY COULD CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO POWER CRITICAL FUNCTIONS.

REFERENCES: 76DA20H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6369 ABORT: 3/3

ITEM: RPC, 10A TO MEC #1
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS A
- 2) MAIN DC DIST ASSY #1
- 3) APCA-4
- 4) APCA-1
- 5) RPC, 10A TO MEC #1
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 54V76A131RPC5
PART NUMBER: MC450-0017-1100 (?-2100)

CAUSES: PIECE PART STRUCTURAL FAILURE, CONTAMINATION, MECH
SHOCK, THERMAL STRESS, VIBRATION

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF RPC CONTROL TO ONE OF TWO
POWER SOURCES TO ONE MEC. NO EFFECT ON CREW/VEHICLE/MISSION AS
THIS IS THE NORMAL FLIGHT CONFIGURATION.

REFERENCES: 76DA20H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6370 ABORT: 3/1R

ITEM: DIODE, ISOLATION 12A (TO CONT BUS CA1)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) MAIN DC DIST ASSY #2
- 3) R15 PANEL
- 4) R2 PANEL
- 5) DIODE, ISOLATION 12A (TO CONT BUS CA1)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [2] B [F] C [P]

LOCATION: 32V73A2CR7
PART NUMBER: JANTX1N1204RA

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

ONE FAILURE WOULD HAVE NO EFFECT AS THE CONTROL BUS HAS REDUNDANT POWER SUPPLIED THROUGH TWO RPC'S. LOSS OF ALL REDUNDANT POWER TO THE NINE CONTROL BUSES WOULD CAUSE LOSS OF CREW/VEHICLE DUE TO LOSS OF CRITICAL FUNCTION CONTROL.

REFERENCES: 76M12E

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6371 ABORT: 3/3

ITEM: DIODE, ISOLATION 12A (TO CONT BUS CA1)
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) MAIN DC DIST ASSY #2
- 3) R15 PANEL
- 4) R2 PANEL
- 5) DIODE, ISOLATION 12A (TO CONT BUS CA1)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 32V73A2CR7
PART NUMBER: JANTX1N1204RA

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

LOSS OF REVERSE CURRENT PROTECTION BETWEEN ONE TRIAD OF CONTROL
BUSSES. CONTROL BUS CIRCUIT IS FURTHER PROTECTED BY 10 A CIRCUIT
BREAKER. THE NET RESULT IS NO EFFECT.

REFERENCES: 76M12E

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6372 ABORT: 3/3

ITEM: DIODE, ISOLATION 12A (TO CONT BUS CA2)
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) MAIN DC DIST ASSY #2
- 3) R15 PANEL
- 4) R2 PANEL
- 5) DIODE, ISOLATION 12A (TO CONT BUS CA2)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES	
FLIGHT PHASE	HDW/FUNC	ABORT
PRELAUNCH:	3/3	RTLS: 3/3
LIFTOFF:	3/3	TAL: 3/3
ONORBIT:	3/3	AOA: 3/3
DEORBIT:	3/3	ATO: 3/3
LANDING/SAFING:	3/3	

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 32V73A2CR8
PART NUMBER: JANTX1N1204RA

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

LOSS OF REVERSE CURRENT PROTECTION BETWEEN ONE TRIAD OF CONTROL BUSES. CONTROL BUS CIRCUIT IS FURTHER PROTECTED BY 10 A CIRCUIT BREAKER. THE NET RESULT IS NO EFFECT.

REFERENCES: 76M12E

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6373 ABORT: 3/1R

ITEM: DIODE, ISOLATION 12A (TO CONT BUS CA2)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) MAIN DC DIST ASSY #2
- 3) R15 PANEL
- 4) R2 PANEL
- 5) DIODE, ISOLATION 12A (TO CONT BUS CA2)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R1	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [2] B [F] C [P]

LOCATION: 32V73A2CR8
PART NUMBER: JANTX1N1204RA

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

ONE FAILURE WOULD HAVE NO EFFECT AS THE CONTROL BUS HAS REDUNDANT POWER SUPPLIED THROUGH TWO RPC'S. LOSS OF ALL REDUNDANT POWER TO THE NINE CONTROL BUSES WOULD CAUSE LOSS OF CREW/VEHICLE DUE TO LOSS OF CRITICAL FUNCTION CONTROL.

REFERENCES: 76M12E

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6374 ABORT: 3/1R

ITEM: DIODE, ISOLATION 12A (TO CONT BUS CA3)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) MAIN DC DIST ASSY #2
- 3) R15 PANEL
- 4) R2 PANEL
- 5) DIODE, ISOLATION 12A (TO CONT BUS CA3)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	HDW/FUNC	CRITICALITIES	HDW/FUNC
PRELAUNCH:	3/3	ABORT	
LIFTOFF:	3/1R	RTLS:	3/1R
ONORBIT:	3/1R	TAL:	3/1R
DEORBIT:	3/1R	AOA:	3/1R
LANDING/SAFING:	3/3	ATO:	3/1R

REDUNDANCY SCREENS: A [2] B [F] C [P]

LOCATION: 32V73A2CR9
PART NUMBER: JANTX1N1204RA

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

ONE FAILURE WOULD HAVE NO EFFECT AS THE CONTROL BUS HAS REDUNDANT POWER SUPPLIED THROUGH TWO RPC'S. LOSS OF ALL REDUNDANT POWER TO THE NINE CONTROL BUSES WOULD CAUSE LOSS OF CREW/VEHICLE DUE TO LOSS OF CRITICAL FUNCTION CONTROL.

REFERENCES: 76M12E

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6375 ABORT: 3/3

ITEM: DIODE, ISOLATION 12A (TO CONT BUS CA3)
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) MAIN DC DIST ASSY #2
- 3) R15 PANEL
- 4) R2 PANEL
- 5) DIODE, ISOLATION 12A (TO CONT BUS CA3)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 32V73A2CR9
PART NUMBER: JANTX1N1204RA

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

LOSS OF REVERSE CURRENT PROTECTION BETWEEN ONE TRIAD OF CONTROL
BUSSES. CONTROL BUS CIRCUIT IS FURTHER PROTECTED BY 10 A CIRCUIT
BREAKER. THE NET RESULT IS NO EFFECT.

REFERENCES: 76M12E

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6376 ABORT: 3/3

ITEM: DIODE, ISOLATION 12A
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) 013 PANEL
- 3) MAIN DC BUS A
- 4) MAIN C CONTR
- 5) DIODE, ISOLATION 12A
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 33V73A13CR5
PART NUMBER: JANTX1N1204RA

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

LOSS OF REDUNDANT ISOLATION CAPABILITY BETWEEN ESS BUS AND MAIN BUS. CIRCUIT BREAKERS COULD BE OPENED IF ISOLATION REQUIRED. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: NOT SHOWN ON 76Y19H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6377 ABORT: 3/1R

ITEM: DIODE, ISOLATION 12A
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) 013 PANEL
- 3) MAIN DC BUS A
- 4) MAIN C CONTR
- 5) DIODE, ISOLATION 12A
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [2] B [F] C [P]

LOCATION: 33V73A13CR5
PART NUMBER: JANTX1N1204RA

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

NO EFFECT ON CREW/VEHICLE UNTIL THIRD FAILURE AND A MAIN DC BUS OR FUEL CELL MUST BE ISOLATED AND MAIN DC BUSES TIED. POSSIBLE LOSS OF CREW/VEHICLE COULD RESULT IN THIS CASE.

REFERENCES: NOT SHOWN ON 76Y19H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6378

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/1R
ABORT: 3/1R

ITEM: DIODE, ISOLATION 12A
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER

SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) 013 PANEL
- 3) ESS BUS 3AB
- 4) MAIN C CONTR
- 5) DIODE, ISOLATION 12A
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [2] B [F] C [P]

LOCATION: 33V73A13CR6
PART NUMBER: JANTX1N1204RA

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

NO EFFECT ON CREW/VEHICLE UNTIL THIRD FAILURE AND A MAIN DC BUS OR FUEL CELL MUST BE ISOLATED AND MAIN DC BUSES TIED. POSSIBLE LOSS OF CREW/VEHICLE COULD RESULT IN THIS CASE.

REFERENCES: SHOWN AS CR16 ON 76Y19H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6379 ABORT: 3/3

ITEM: DIODE, ISOLATION 12A
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) 013 PANEL
- 3) ESS BUS 3AB
- 4) MAIN C CONTR
- 5) DIODE, ISOLATION 12A
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 33V73A13CR6
PART NUMBER: JANTX1N1204RA

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

LOSS OF REDUNDANT ISOLATION CAPABILITY BETWEEN ESS BUS AND MAIN BUS. CIRCUIT BREAKERS COULD BE OPENED IF ISOLATION REQUIRED. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: SHOWN AS CR16 ON 76Y19H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6380 ABORT: 3/3

ITEM: DIODE TO INV 1 A
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS A
- 2) MAIN DC DIST ASSY #1
- 3) FPCA-1
- 4) DIODE TO INV 1 A
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A22CR15

PART NUMBER:

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF INPUT CURRENT SURGE PROTECTION TO THE INVERTER. SINCE THE INVERTERS ARE STARTED ON THE GROUND AND LATCHED "ON", THIS FAILURE WOULD HAVE NO EFFECT DURING A NORMAL MISSION. IF THE INVERTER HAD TO BE RESTARTED DURING FLIGHT, IT MIGHT BE DAMAGED OR LOST. HOWEVER, THERE ARE ENOUGH REDUNDANT AC BUSES TO HANDLE THE LOADS.

REFERENCES: 76BF12F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6381

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

ITEM: DIODE TO INV 1 A
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER

SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS A
- 2) MAIN DC DIST ASSY #1
- 3) FPCA-1
- 4) DIODE TO INV 1 A
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A22CR15
PART NUMBER:

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE AS
THERE IS NO CURRENT FLOW THROUGH THIS DIODE AFTER INVERTER START
UP.

REFERENCES: 76BF12F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6382 ABORT: 3/3

ITEM: DIODE TO INV 1 B
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS A
- 2) MAIN DC DIST ASSY #1
- 3) FPCA-1
- 4) DIODE TO INV 1 B
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A22CR16
PART NUMBER:

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF INPUT CURRENT SURGE PROTECTION TO THE INVERTER. SINCE THE INVERTERS ARE STARTED ON THE GROUND AND LATCHED "ON", THIS FAILURE WOULD HAVE NO EFFECT DURING A NORMAL MISSION. IF THE INVERTER HAD TO BE RESTARTED DURING FLIGHT, IT MIGHT BE DAMAGED OR LOST. HOWEVER, THERE ARE ENOUGH REDUNDANT AC BUSES TO HANDLE THE LOADS.

REFERENCES: 76BF12D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6383

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

ITEM: DIODE TO INV 1 B
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER

SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS A
- 2) MAIN DC DIST ASSY #1
- 3) FPCA-1
- 4) DIODE TO INV 1 B
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A22CR16
PART NUMBER:

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE AS
THERE IS NO CURRENT FLOW THROUGH THIS DIODE AFTER INVERTER START
UP.

REFERENCES: 76BF12D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6384 ABORT: 3/3

ITEM: DIODE TO INV 1 C
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS A
- 2) MAIN DC DIST ASSY #1
- 3) FPCA-1
- 4) DIODE TO INV 1 C
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A22CR17
PART NUMBER:

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE THE LOSS OF INPUT CURRENT SURGE PROTECTION TO THE INVERTER. SINCE THE INVERTERS ARE STARTED ON THE GROUND AND LATCHED "ON", THIS FAILURE WOULD HAVE NO EFFECT DURING A NORMAL MISSION. IF THE INVERTER HAD TO BE RESTARTED DURING FLIGHT, IT MIGHT BE DAMAGED OR LOST. HOWEVER, THERE ARE ENOUGH REDUNDANT AC BUSES TO HANDLE THE LOADS.

REFERENCES: 76BF12B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6385

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

ITEM: DIODE TO INV 1 C
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER

SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS A
- 2) MAIN DC DIST ASSY #1
- 3) FPCA-1
- 4) DIODE TO INV 1 C
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A22CR17

PART NUMBER:

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE AS THERE IS NO CURRENT FLOW THROUGH THIS DIODE AFTER INVERTER START UP.

REFERENCES: 76BF12B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6386 ABORT: 3/3

ITEM: FUSE, 3A TO AC BUS 1C OFF
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) FLCA-1
- 3) FUSE, 3A TO AC BUS 1C OFF
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A16F5
PART NUMBER: ME451-0010-1030

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE WOULD PREVENT THE CREW FROM CHANGING THE STATE OF THE LATCHING RELAY FOR ONE PHASE OF AN AC BUS. SINCE THE INVERTERS ARE STARTED ON THE GROUND AND LATCHED ON FOR THE DURATION OF THE FLIGHT, THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE. ALTERNATE MEANS OF REMOVING POWER FROM AN INVERTER EXIST IF IT WERE NECESSARY TO DO SO.

REFERENCES: 76BF16C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6387 ABORT: 3/3

ITEM: FUSE, 3A TO AC BUS 1B OFF
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) FLCA-1
- 3) FUSE, 3A TO AC BUS 1B OFF
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A16F6
PART NUMBER: ME451-0010-1030

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE WOULD PREVENT THE CREW FROM CHANGING THE STATE OF THE LATCHING RELAY FOR ONE PHASE OF AN AC BUS. SINCE THE INVERTERS ARE STARTED ON THE GROUND AND LATCHED ON FOR THE DURATION OF THE FLIGHT, THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE. ALTERNATE MEANS OF REMOVING POWER FROM AN INVERTER EXIST IF IT WERE NECESSARY TO DO SO.

REFERENCES: 76BF16E

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6388 ABORT: 3/3

ITEM: FUSE, 3A TO AC BUS 1A OFF
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) FLCA-1
- 3) FUSE, 3A TO AC BUS 1A OFF
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A16F7
PART NUMBER: ME451-0010-1030

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE WOULD PREVENT THE CREW FROM CHANGING THE STATE OF THE LATCHING RELAY FOR ONE PHASE OF AN AC BUS. SINCE THE INVERTERS ARE STARTED ON THE GROUND AND LATCHED ON FOR THE DURATION OF THE FLIGHT, THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE. ALTERNATE MEANS OF REMOVING POWER FROM AN INVERTER EXIST IF IT WERE NECESSARY TO DO SO.

REFERENCES: 76BF16H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6389 ABORT: 3/3

ITEM: FUSE, 3A TO AC BUS 1C ON
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) FLCA-1
- 3) FUSE, 3A TO AC BUS 1C ON
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A16F8
PART NUMBER: ME451-0010-1030

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE WOULD PREVENT THE CREW FROM CHANGING THE STATE OF THE LATCHING RELAY FOR ONE PHASE OF AN AC BUS. SINCE THE INVERTERS ARE STARTED ON THE GROUND AND LATCHED ON FOR THE DURATION OF THE FLIGHT, THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE. ALTERNATE MEANS OF REMOVING POWER FROM AN INVERTER EXIST IF IT WERE NECESSARY TO DO SO.

REFERENCES: 76BF16B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6390 ABORT: 3/3

ITEM: FUSE, 3A TO AC BUS 1B ON
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) FLCA-1
- 3) FUSE, 3A TO AC BUS 1B ON
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A16F9
PART NUMBER: ME451-0010-1030

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE WOULD PREVENT THE CREW FROM CHANGING THE STATE OF THE LATCHING RELAY FOR ONE PHASE OF AN AC BUS. SINCE THE INVERTERS ARE STARTED ON THE GROUND AND LATCHED ON FOR THE DURATION OF THE FLIGHT, THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE. ALTERNATE MEANS OF REMOVING POWER FROM AN INVERTER EXIST IF IT WERE NECESSARY TO DO SO.

REFERENCES: 76BF16D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6391 ABORT: 3/3

ITEM: FUSE, 3A TO AC BUS 1A ON
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) FLCA-1
- 3) FUSE, 3A TO AC BUS 1A ON
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		
	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A16F10
PART NUMBER: ME451-0010-1030

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE WOULD PREVENT THE CREW FROM CHANGING THE STATE OF THE LATCHING RELAY FOR ONE PHASE OF AN AC BUS. SINCE THE INVERTERS ARE STARTED ON THE GROUND AND LATCHED ON FOR THE DURATION OF THE FLIGHT, THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE. ALTERNATE MEANS OF REMOVING POWER FROM AN INVERTER EXIST IF IT WERE NECESSARY TO DO SO.

REFERENCES: 76BF16G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6392 ABORT: 3/3

ITEM: FUSE, 3A TO AC BUS 3 CMD
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) PRE-FLIGHT TEST BUS #2
- 3) FLCA-3
- 4) FUSE, 3A TO AC BUS 3 CMD
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A18F
PART NUMBER: ME451-0010-1030

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS CIRCUIT IS USED FOR GROUND C/O ONLY AND IS NOT POWERED DURING FLIGHT OPERATIONS.

REFERENCES: 76BV23H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6393 ABORT: 3/3

ITEM: FUSE, 3A TO AC BUS 3 CMD
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) PRE-FLIGHT TEST BUS #2
- 3) FLCA-3
- 4) FUSE, 3A TO AC BUS 3 CMD
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A18F
PART NUMBER: ME451-0010-1030

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:
THIS CIRCUIT IS USED FOR GROUND C/O ONLY AND IS NOT POWERED
DURING FLIGHT OPERATIONS.

REFERENCES: 76BV23G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6394 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 1A OFF
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) R1A1 PANEL
- 3) FLCA-1
- 4) DIODE, ISOLATION TO INV 1A OFF
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES	
FLIGHT PHASE	HDW/FUNC	ABORT
PRELAUNCH:	3/3	RTLS: 3/3
LIFTOFF:	3/3	TAL: 3/3
ONORBIT:	3/3	AOA: 3/3
DEORBIT:	3/3	ATO: 3/3
LANDING/SAFING:	3/3	

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A16CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT DURING FLIGHT OPERATIONS AS THE INVERTER POWER IS LATCHED "ON" PRE-LAUNCH.

REFERENCES: 76BF17H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6395 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 1B OFF
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) R1A1 PANEL
- 3) FLCA-1
- 4) DIODE, ISOLATION TO INV 1B OFF
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A16CR
PART NUMBER: JANTXVIN5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT DURING FLIGHT OPERATIONS AS THE INVERTER POWER IS LATCHED "ON" PRE-LAUNCH.

REFERENCES: 76BF17E

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6396 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 1C OFF
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) R1A1 PANEL
- 3) FLCA-1
- 4) DIODE, ISOLATION TO INV 1C OFF
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A16CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT DURING FLIGHT OPERATIONS AS THE INVERTER POWER IS LATCHED "ON" PRE-LAUNCH.

REFERENCES: 76BF17C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6397 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 2A OFF
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) R1A1 PANEL
- 3) FLCA-2
- 4) DIODE, ISOLATION TO INV 2A OFF
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A17CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT DURING FLIGHT OPERATIONS AS THE INVERTER POWER IS LATCHED "ON" PRE-LAUNCH.

REFERENCES: 76BM17H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6398 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 2B OFF
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) R1A1 PANEL
- 3) FLCA-2
- 4) DIODE, ISOLATION TO INV 2B OFF
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A17CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT DURING FLIGHT OPERATIONS AS THE INVERTER POWER IS LATCHED "ON" PRE-LAUNCH.

REFERENCES: 76BM17E

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6399 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 2C OFF
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) R1A1 PANEL
- 3) FLCA-2
- 4) DIODE, ISOLATION TO INV 2C OFF
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A17CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT DURING FLIGHT OPERATIONS AS THE INVERTER POWER IS LATCHED "ON" PRE-LAUNCH.

REFERENCES: 76BM17C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6400 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 3A OFF
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) R1A1 PANEL
- 3) FLCA-3
- 4) DIODE, ISOLATION TO INV 3A OFF
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A18CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT DURING FLIGHT OPERATIONS AS THE INVERTER POWER IS LATCHED "ON" PRE-LAUNCH.

REFERENCES: 76BU17H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6401 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 3B OFF
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) R1A1 PANEL
- 3) FLCA-3
- 4) DIODE, ISOLATION TO INV 3B OFF
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A18CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT DURING FLIGHT OPERATIONS AS THE INVERTER POWER IS LATCHED "ON" PRE-LAUNCH.

REFERENCES: 76BU17E

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6402 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 3C OFF
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) R1A1 PANEL
- 3) FLCA-3
- 4) DIODE, ISOLATION TO INV 3C OFF
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A18CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT DURING FLIGHT OPERATIONS AS THE INVERTER POWER IS LATCHED "ON" PRE-LAUNCH.

REFERENCES: 76BU17C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6403 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 1A OFF
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) R1A1 PANEL
- 3) FLCA-1
- 4) DIODE, ISOLATION TO INV 1A OFF
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A16CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT DURING FLIGHT OPERATIONS AS THE INVERTER POWER IS LATCHED "ON" PRE-LAUNCH.

REFERENCES: 76BF17H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6404 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 1B OFF
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) R1A1 PANEL
- 3) FLCA-1
- 4) DIODE, ISOLATION TO INV 1B OFF
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A16CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT DURING FLIGHT OPERATIONS AS THE INVERTER POWER IS LATCHED "ON" PRE-LAUNCH.

REFERENCES: 76BF17E

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6405 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 1C OFF
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) R1A1 PANEL
- 3) FLCA-1
- 4) DIODE, ISOLATION TO INV 1C OFF
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A16CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT DURING FLIGHT OPERATIONS AS THE INVERTER POWER IS LATCHED "ON" PRE-LAUNCH.

REFERENCES: 76BF17C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6406 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 2A OFF
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) R1A1 PANEL
- 3) FLCA-2
- 4) DIODE, ISOLATION TO INV 2A OFF
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A17CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT DURING FLIGHT OPERATIONS AS THE INVERTER POWER IS LATCHED "ON" PRE-LAUNCH.

REFERENCES: 76BM17H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6407 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 2B OFF
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) R1A1 PANEL
- 3) FLCA-2
- 4) DIODE, ISOLATION TO INV 2B OFF
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A17CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT DURING FLIGHT OPERATIONS AS THE INVERTER POWER IS LATCHED "ON" PRE-LAUNCH.

REFERENCES: 76BM17E

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6408 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 2C OFF
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) R1A1 PANEL
- 3) FLCA-2
- 4) DIODE, ISOLATION TO INV 2C OFF
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A17CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT DURING FLIGHT OPERATIONS AS THE INVERTER POWER IS LATCHED "ON" PRE-LAUNCH.

REFERENCES: 76BM17C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6409 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 3A OFF
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) R1A1 PANEL
- 3) FLCA-3
- 4) DIODE, ISOLATION TO INV 3A OFF
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A18CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT DURING FLIGHT OPERATIONS AS THE INVERTER POWER IS LATCHED "ON" PRE-LAUNCH.

REFERENCES: 76BU17H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6410 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 3B OFF
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) R1A1 PANEL
- 3) FLCA-3
- 4) DIODE, ISOLATION TO INV 3B OFF
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A18CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT DURING FLIGHT OPERATIONS AS THE INVERTER POWER IS LATCHED "ON" PRE-LAUNCH.

REFERENCES: 76BU17E

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6411 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 3C OFF
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) R1A1 PANEL
- 3) FLCA-3
- 4) DIODE, ISOLATION TO INV 3C OFF
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A18CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT DURING FLIGHT OPERATIONS AS THE INVERTER POWER IS LATCHED "ON" PRE-LAUNCH.

REFERENCES: 76BU17C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6412 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 3C ON
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) R1A1 PANEL
- 3) FLCA-3
- 4) DIODE, ISOLATION TO INV 3C ON
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A18CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT DURING FLIGHT OPERATIONS AS THE INVERTER POWER IS LATCHED "ON" PRE-LAUNCH.

REFERENCES: 76BU17A

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6413 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 3B ON
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) R1A1 PANEL
- 3) FLCA-3
- 4) DIODE, ISOLATION TO INV 3B ON
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A18CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT DURING FLIGHT OPERATIONS AS THE INVERTER POWER IS LATCHED "ON" PRE-LAUNCH.

REFERENCES: 76BU17C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6414 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 3A ON
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) R1A1 PANEL
- 3) FLCA-3
- 4) DIODE, ISOLATION TO INV 3A ON
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A18CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT DURING FLIGHT OPERATIONS AS THE INVERTER POWER IS LATCHED "ON" PRE-LAUNCH.

REFERENCES: 76BU17F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6415 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 2C ON
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) R1A1 PANEL
- 3) FLCA-2
- 4) DIODE, ISOLATION TO INV 2C ON
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A17CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT DURING FLIGHT OPERATIONS AS THE INVERTER POWER IS LATCHED "ON" PRE-LAUNCH.

REFERENCES: 76BM17A

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6416 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 2B ON
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) R1A1 PANEL
- 3) FLCA-2
- 4) DIODE, ISOLATION TO INV 2B ON
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		
	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A17CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT DURING FLIGHT OPERATIONS AS THE INVERTER POWER IS LATCHED "ON" PRE-LAUNCH.

REFERENCES: 76BM17C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6417 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 2A ON
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) R1A1 PANEL
- 3) FLCA-2
- 4) DIODE, ISOLATION TO INV 2A ON
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A17CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT DURING FLIGHT OPERATIONS AS THE INVERTER POWER IS LATCHED "ON" PRE-LAUNCH.

REFERENCES: 76BM17F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE:	3/11/87	HIGHEST CRITICALITY	HDW/FUNC
SUBSYSTEM:	EPD&C	FLIGHT:	3/3
MDAC ID:	6418	ABORT:	3/3

ITEM: DIODE, ISOLATION TO INV 1C ON
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) R1A1 PANEL
- 3) FLCA-1
- 4) DIODE, ISOLATION TO INV 1C ON
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		
	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A16CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT DURING FLIGHT OPERATIONS AS THE INVERTER POWER IS LATCHED "ON" PRE-LAUNCH.

REFERENCES: 76BF17A

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6419 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 1B ON
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) R1A1 PANEL
- 3) FLCA-1
- 4) DIODE, ISOLATION TO INV 1B ON
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		
	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A16CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT DURING FLIGHT OPERATIONS AS THE INVERTER POWER IS LATCHED "ON" PRE-LAUNCH.

REFERENCES: 76BF17C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6420 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 1A
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) R1A1 PANEL
- 3) FLCA-1
- 4) DIODE, ISOLATION TO INV 1A
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A16CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT DURING FLIGHT OPERATIONS AS THE INVERTER POWER IS LATCHED "ON" PRE-LAUNCH.

REFERENCES: 76BF17F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6421 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 3C ON
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) R1A1 PANEL
- 3) FLCA-3
- 4) DIODE, ISOLATION TO INV 3C ON
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A18CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT DURING FLIGHT OPERATIONS AS THE INVERTER POWER IS LATCHED "ON" PRE-LAUNCH.

REFERENCES: 76BU17A

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6422 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 3B ON
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) R1A1 PANEL
- 3) FLCA-3
- 4) DIODE, ISOLATION TO INV 3B ON
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A18CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT DURING FLIGHT OPERATIONS AS THE INVERTER POWER IS LATCHED "ON" PRE-LAUNCH.

REFERENCES: 76BU17C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6423 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 3A ON
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) R1A1 PANEL
- 3) FLCA-3
- 4) DIODE, ISOLATION TO INV 3A ON
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	HDW/FUNC	CRITICALITIES	ABORT	HDW/FUNC
PRELAUNCH:	3/3		RTLS:	3/3
LIFTOFF:	3/3		TAL:	3/3
ONORBIT:	3/3		AOA:	3/3
DEORBIT:	3/3		ATO:	3/3
LANDING/SAFING:	3/3			

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A18CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT DURING FLIGHT OPERATIONS AS THE INVERTER POWER IS LATCHED "ON" PRE-LAUNCH.

REFERENCES: 76BU17F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6424 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 2C ON
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) R1A1 PANEL
- 3) FLCA-2
- 4) DIODE, ISOLATION TO INV 2C ON
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A17CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT DURING FLIGHT OPERATIONS AS THE INVERTER POWER IS LATCHED "ON" PRE-LAUNCH.

REFERENCES: 76BM17A

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6425 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 2B ON
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) R1A1 PANEL
- 3) FLCA-2
- 4) DIODE, ISOLATION TO INV 2B ON
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A17CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT DURING FLIGHT OPERATIONS AS THE INVERTER POWER IS LATCHED "ON" PRE-LAUNCH.

REFERENCES: 76BM17C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6426 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 2A ON
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) R1A1 PANEL
- 3) FLCA-2
- 4) DIODE, ISOLATION TO INV 2A ON
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A17CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT DURING FLIGHT OPERATIONS AS THE INVERTER POWER IS LATCHED "ON" PRE-LAUNCH.

REFERENCES: 76BM17F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6427 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 1C ON
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) R1A1 PANEL
- 3) FLCA-1
- 4) DIODE, ISOLATION TO INV 1C ON
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A16CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT DURING FLIGHT OPERATIONS AS THE INVERTER POWER IS LATCHED "ON" PRE-LAUNCH.

REFERENCES: 76BF17A

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6428 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 1B ON
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) R1A1 PANEL
- 3) FLCA-1
- 4) DIODE, ISOLATION TO INV 1B ON
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A16CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT DURING FLIGHT OPERATIONS AS THE INVERTER POWER IS LATCHED "ON" PRE-LAUNCH.

REFERENCES: 76BF17C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6429 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 1A ON
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) R1A1 PANEL
- 3) FLCA-1
- 4) DIODE, ISOLATION TO INV 1A ON
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A16CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT DURING FLIGHT OPERATIONS AS THE INVERTER POWER IS LATCHED "ON" PRE-LAUNCH.

REFERENCES: 76BF17F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6430 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 1A OFF
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) PRE-FLIGHT TEST BUS #1
- 3) FLCA-1
- 4) DIODE, ISOLATION TO INV 1A OFF
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A16CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS USED DURING GROUND C/O ONLY AND WOULD HAVE NO
EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BF17H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6431 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 1B OFF
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) PRE-FLIGHT TEST BUS #1
- 3) FLCA-1
- 4) DIODE, ISOLATION TO INV 1B OFF
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A16CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS USED DURING GROUND C/O ONLY AND WOULD HAVE NO
EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BF17E

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6432 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 1C OFF
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) PRE-FLIGHT TEST BUS #1
- 3) FLCA-1
- 4) DIODE, ISOLATION TO INV 1C OFF
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A16CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS USED DURING GROUND C/O ONLY AND WOULD HAVE NO
EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BF17C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6433 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 2A OFF
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) PRE-FLIGHT TEST BUS #2
- 3) FLCA-2
- 4) DIODE, ISOLATION TO INV 2A OFF
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A17CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS USED DURING GROUND C/O ONLY AND WOULD HAVE NO
EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BM17H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6434 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 2B OFF
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) PRE-FLIGHT TEST BUS #2
- 3) FLCA-2
- 4) DIODE, ISOLATION TO INV 2B OFF
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A17CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS USED DURING GROUND C/O ONLY AND WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BM17E

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6435 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 2C OFF
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) PRE-FLIGHT TEST BUS #2
- 3) FLCA-2
- 4) DIODE, ISOLATION TO INV 2C OFF
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A17CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS USED DURING GROUND C/O ONLY AND WOULD HAVE NO
EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BM17C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6436 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 3A OFF
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) PRE-FLIGHT TEST BUS #2
- 3) FLCA-3
- 4) DIODE, ISOLATION TO INV 3A OFF
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	HDW/FUNC	CRITICALITIES	ABORT	HDW/FUNC
PRELAUNCH:	3/3		RTLS:	3/3
LIFTOFF:	3/3		TAL:	3/3
ONORBIT:	3/3		AOA:	3/3
DEORBIT:	3/3		ATO:	3/3
LANDING/SAFING:	3/3			

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A18CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS USED DURING GROUND C/O ONLY AND WOULD HAVE NO
EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BU17H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6437 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 3B OFF
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) PRE-FLIGHT TEST BUS #2
- 3) FLCA-3
- 4) DIODE, ISOLATION TO INV 3B OFF
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	HDW/FUNC	CRITICALITIES ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A18CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS USED DURING GROUND C/O ONLY AND WOULD HAVE NO
EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BU17E

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6438 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 3C OFF
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) PRE-FLIGHT TEST BUS #2
- 3) FLCA-3
- 4) DIODE, ISOLATION TO INV 3C OFF
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A18CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS USED DURING GROUND C/O ONLY AND WOULD HAVE NO
EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BU17C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6439 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 1A OFF
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) PRE-FLIGHT TEST BUS #1
- 3) FLCA-1
- 4) DIODE, ISOLATION TO INV 1A OFF
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		
	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A16CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS USED DURING GROUND C/O ONLY AND WOULD HAVE NO
EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BF17H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6440 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 1B OFF
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) PRE-FLIGHT TEST BUS #1
- 3) FLCA-1
- 4) DIODE, ISOLATION TO INV 1B OFF
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A16CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS USED DURING GROUND C/O ONLY AND WOULD HAVE NO
EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BF17E

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6441 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 1C OFF
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) PRE-FLIGHT TEST BUS #1
- 3) FLCA-1
- 4) DIODE, ISOLATION TO INV 1C OFF
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A16CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS USED DURING GROUND C/O ONLY AND WOULD HAVE NO
EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BF17C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6442 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 2A OFF
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) PRE-FLIGHT TEST BUS #2
- 3) FLCA-2
- 4) DIODE, ISOLATION TO INV 2A OFF
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A17CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS USED DURING GROUND C/O ONLY AND WOULD HAVE NO
EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BM17H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6443 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 2B OFF
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) PRE-FLIGHT TEST BUS #2
- 3) FLCA-2
- 4) DIODE, ISOLATION TO INV 2B OFF
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	HDW/FUNC	CRITICALITIES	ABORT	HDW/FUNC
PRELAUNCH:	3/3		RTLS:	3/3
LIFTOFF:	3/3		TAL:	3/3
ONORBIT:	3/3		AOA:	3/3
DEORBIT:	3/3		ATO:	3/3
LANDING/SAFING:	3/3			

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A17CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS USED DURING GROUND C/O ONLY AND WOULD HAVE NO
EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BM17E

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6444 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 2C OFF
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) PRE-FLIGHT TEST BUS #2
- 3) FLCA-2
- 4) DIODE, ISOLATION TO INV 2C OFF
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A17CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS USED DURING GROUND C/O ONLY AND WOULD HAVE NO
EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BM17C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6445 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 3A OFF
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) PRE-FLIGHT TEST BUS #2
- 3) FLCA-3
- 4) DIODE, ISOLATION TO INV 3A OFF
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A18CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS USED DURING GROUND C/O ONLY AND WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BU17H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6446 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 3B OFF
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) PRE-FLIGHT TEST BUS #2
- 3) FLCA-3
- 4) DIODE, ISOLATION TO INV 3B OFF
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A18CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS USED DURING GROUND C/O ONLY AND WOULD HAVE NO
EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BU17E

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6447 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 3C OFF
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) PRE-FLIGHT TEST BUS #2
- 3) FLCA-3
- 4) DIODE, ISOLATION TO INV 3C OFF
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		
	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A18CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS USED DURING GROUND C/O ONLY AND WOULD HAVE NO
EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BU17C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6448 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 1A ON
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) ESS BUS 1BC
- 3) FLCA-1
- 4) DIODE, ISOLATION TO INV 1A ON
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A16CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS USED DURING GROUND C/O ONLY AND WOULD HAVE NO
EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BF17G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6449 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 1B ON
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) ESS BUS 1BC
- 3) FLCA-1
- 4) DIODE, ISOLATION TO INV 1B ON
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	HDW/FUNC	CRITICALITIES ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A16CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS USED DURING GROUND C/O ONLY AND WOULD HAVE NO
EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BF17D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6450 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 1C ON
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) ESS BUS 1BC
- 3) FLCA-1
- 4) DIODE, ISOLATION TO INV 1C ON
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A16CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS USED DURING GROUND C/O ONLY AND WOULD HAVE NO
EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BF17B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6451 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 2A ON
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) ESS BUS 2CA
- 3) FLCA-2
- 4) DIODE, ISOLATION TO INV 2A ON
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A17CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS USED DURING GROUND C/O ONLY AND WOULD HAVE NO
EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BM17G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6452 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 2B ON
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) ESS BUS 2CA
- 3) FLCA-2
- 4) DIODE, ISOLATION TO INV 2B ON
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A17CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS USED DURING GROUND C/O ONLY AND WOULD HAVE NO
EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BM17D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6453 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 2C ON
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) ESS BUS 2CA
- 3) FLCA-2
- 4) DIODE, ISOLATION TO INV 2C ON
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A17CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS USED DURING GROUND C/O ONLY AND WOULD HAVE NO
EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BM17B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6454 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 3A ON
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) ESS BUS 3AB
- 3) FLCA-3
- 4) DIODE, ISOLATION TO INV 3A ON
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A18CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS USED DURING GROUND C/O ONLY AND WOULD HAVE NO
EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BU17G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6455 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 3B ON
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) ESS BUS 3AB
- 3) FLCA-3
- 4) DIODE, ISOLATION TO INV 3B ON
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	HDW/FUNC	CRITICALITIES	ABORT	HDW/FUNC
PRELAUNCH:	3/3		RTLS:	3/3
LIFTOFF:	3/3		TAL:	3/3
ONORBIT:	3/3		AOA:	3/3
DEORBIT:	3/3		ATO:	3/3
LANDING/SAFING:	3/3			

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A18CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS USED DURING GROUND C/O ONLY AND WOULD HAVE NO
EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BU17D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6456 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 3C ON
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) ESS BUS 3AB
- 3) FLCA-3
- 4) DIODE, ISOLATION TO INV 3C ON
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A18CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS USED DURING GROUND C/O ONLY AND WOULD HAVE NO
EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BU17B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6457 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 1A ON
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) ESS BUS 1BC
- 3) FLCA-1
- 4) DIODE, ISOLATION TO INV 1A ON
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A16CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

EFFECTS/RATIONALE:
THIS DIODE IS USED DURING GROUND C/O ONLY AND WOULD HAVE NO
EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BF17G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6458 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 1B ON
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) ESS BUS 1BC
- 3) FLCA-1
- 4) DIODE, ISOLATION TO INV 1B ON
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A16CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS USED DURING GROUND C/O ONLY AND WOULD HAVE NO
EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BF17D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6459 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 1C ON
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) ESS BUS 1BC
- 3) FLCA-1
- 4) DIODE, ISOLATION TO INV 1C ON
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	HDW/FUNC	CRITICALITIES	ABORT	HDW/FUNC
PRELAUNCH:	3/3		RTLS:	3/3
LIFTOFF:	3/3		TAL:	3/3
ONORBIT:	3/3		AOA:	3/3
DEORBIT:	3/3		ATO:	3/3
LANDING/SAFING:	3/3			

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A16CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS USED DURING GROUND C/O ONLY AND WOULD HAVE NO
EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BF17B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6460 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 2A ON
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) ESS BUS 2CA
- 3) FLCA-2
- 4) DIODE, ISOLATION TO INV 2A ON
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A17CR
PART NUMBER: JAN TXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS USED DURING GROUND C/O ONLY AND WOULD HAVE NO
EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BM17G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6461 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 2B ON
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) ESS BUS 2CA
- 3) FLCA-2
- 4) DIODE, ISOLATION TO INV 2B ON
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A17CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS USED DURING GROUND C/O ONLY AND WOULD HAVE NO
EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BM17D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6462 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 2C ON
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) ESS BUS 2CA
- 3) FLCA-2
- 4) DIODE, ISOLATION TO INV 2C ON
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A17CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS USED DURING GROUND C/O ONLY AND WOULD HAVE NO
EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BM17B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6463 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 3A ON
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) ESS BUS 3AB
- 3) FLCA-3
- 4) DIODE, ISOLATION TO INV 3A ON
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		
	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A18CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS USED DURING GROUND C/O ONLY AND WOULD HAVE NO
EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BU17G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6464 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 3B ON
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) ESS BUS 3AB
- 3) FLCA-3
- 4) DIODE, ISOLATION TO INV 3B ON
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A18CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS USED DURING GROUND C/O ONLY AND WOULD HAVE NO
EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BU17D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6465 ABORT: 3/3

ITEM: DIODE, ISOLATION TO INV 3C ON
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) GSE POWER
- 2) ESS BUS 3AB
- 3) FLCA-3
- 4) DIODE, ISOLATION TO INV 3C ON
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A18CR
PART NUMBER: JANTXV1N5551

CAUSES: THERMAL STRESS, VIBRATION, MECH. SHOCK

EFFECTS/RATIONALE:

THIS DIODE IS USED DURING GROUND C/O ONLY AND WOULD HAVE NO
EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BU17B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6466 ABORT: 3/3

ITEM: SWITCH, ROTARY 4P9P, DC INDICATOR SELECT
FAILURE MODE: FAILS OPEN OR SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) F9A2 PANEL
- 2) SWITCH, ROTARY 4P9P, DC INDICATOR SELECT
- 3)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 34V73A9A2S2
PART NUMBER: ME452-0093-5029

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK

EFFECTS/RATIONALE:

THIS SWITCH PROVIDES THE CAPABILITY TO VISUALLY MONITER DC
VOLTAGES, AMPERAGES, AND SIGNAL STRENGTHS. THESE ARE NON-
CRITICAL MEASUREMENTS BECAUSE ALTERNATE METHODS OF MEASUREMENT
ARE AVAILABLE.

REFERENCES: 76B-G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6467 ABORT: 3/3

ITEM: SWITCH, ROTARY DP9P, AC DISPLAY SELECT
FAILURE MODE: FAILS OPEN OR SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) F9A2 PANEL
- 2) SWITCH, ROTARY DP9P, AC DISPLAY SELECT
- 3)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 34V73A9A2S1
PART NUMBER: ME452-0093-5023

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK

EFFECTS/RATIONALE:

THIS SWITCH PROVIDES THE CAPABILITY TO VISUALLY MONITER AC
VOLTAGES. THESE ARE NON-CRITICAL MEASUREMENTS BECAUSE ALTERNATE
METHODS OF MEASUREMENT ARE AVAILABLE.

REFERENCES: 76BG-G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6468 ABORT: 3/3

ITEM: INDICATOR, EVENT (FC/MAIN BUS A)
FAILURE MODE: FAILS TO INDICATE PROPER STATUS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) MAIN DC DIST ASSY #1
- 3) R1A1 PANEL
- 4) INDICATOR, EVENT (FC/MAIN BUS A)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 32V73A1A1DS1
PART NUMBER: MC432-0222-0016

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A NON-CRITICAL INDICATOR. ALTERNATE MEANS OF STATUS
INDICATION ARE AVAILABLE. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76B12H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6469 ABORT: 3/3

ITEM: INDICATOR, EVENT (FC/MAIN BUS B)
FAILURE MODE: FAILS TO INDICATE PROPER STATUS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) MAIN DC DIST ASSY #2
- 3) R1A1 PANEL
- 4) INDICATOR, EVENT (FC/MAIN BUS B)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES	
	HDW/FUNC	ABORT
PRELAUNCH:	3/3	RTLS: 3/3
LIFTOFF:	3/3	TAL: 3/3
ONORBIT:	3/3	AOA: 3/3
DEORBIT:	3/3	ATO: 3/3
LANDING/SAFING:	3/3	

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 32V73A1A1DS3
PART NUMBER: MC432-0222-0016

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A NON-CRITICAL INDICATOR. ALTERNATE MEANS OF STATUS
INDICATION ARE AVAILABLE. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76L13H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6470 ABORT: 3/3

ITEM: INDICATOR, EVENT (FC/MAIN BUS C)
FAILURE MODE: FAILS TO INDICATE PROPER STATUS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) MAIN DC DIST ASSY #3
- 3) R1A1 PANEL
- 4) INDICATOR, EVENT (FC/MAIN BUS C)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		
	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 32V73A1A1DS5
PART NUMBER: MC432-0222-0016

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A NON-CRITICAL INDICATOR. ALTERNATE MEANS OF STATUS
INDICATION ARE AVAILABLE. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76Y13H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6471 ABORT: 3/3

ITEM: INDICATOR, EVENT (MAIN TIE BUS A)
FAILURE MODE: FAILS TO INDICATE PROPER STATUS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) MAIN DC DIST ASSY #1
- 3) R1A1 PANEL
- 4) INDICATOR, EVENT (MAIN TIE BUS A)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 32V73A1A1DS2
PART NUMBER: MC432-0222-0016

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A NON-CRITICAL INDICATOR. ALTERNATE MEANS OF STATUS
INDICATION ARE AVAILABLE. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76B16H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6472 ABORT: 3/3

ITEM: INDICATOR, EVENT (MAIN TIE BUS B)
FAILURE MODE: FAILS TO INDICATE PROPER STATUS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) MAIN DC DIST ASSY #2
- 3) R1A1 PANEL
- 4) INDICATOR, EVENT (MAIN TIE BUS B)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		
	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 32V73A1A1DS4
PART NUMBER: MC432-0222-0016

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A NON-CRITICAL INDICATOR. ALTERNATE MEANS OF STATUS
INDICATION ARE AVAILABLE. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76L16H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6473 ABORT: 3/3

ITEM: INDICATOR, EVENT (MAIN TIE BUS C)
FAILURE MODE: FAILS TO INDICATE PROPER STATUS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) MAIN DC DIST ASSY #3
- 3) R1A1 PANEL
- 4) INDICATOR, EVENT (MAIN TIE BUS C)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		
	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 32V73A1A1DS6
PART NUMBER: MC432-0222-0016

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A NON-CRITICAL INDICATOR. ALTERNATE MEANS OF STATUS
INDICATION ARE AVAILABLE. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76Y16H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6474 ABORT: 3/3

ITEM: INDICATOR, EVENT (INV/AC BUS #1)
FAILURE MODE: FAILS TO INDICATE PROPER STATUS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) INV DIST & CONT ASSY #1
- 3) R1A1 PANEL
- 4) INDICATOR, EVENT (INV/AC BUS #1)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 32V73A1A1DS8
PART NUMBER: MC432-0222-0032

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A NON-CRITICAL INDICATOR. ALTERNATE MEANS OF STATUS
INDICATION ARE AVAILABLE. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BG8H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6475 ABORT: 3/3

ITEM: INDICATOR, EVENT (INV/AC BUS #2)
FAILURE MODE: FAILS TO INDICATE PROPER STATUS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) INV DIST & CONT ASSY #2
- 3) R1A1 PANEL
- 4) INDICATOR, EVENT (INV/AC BUS #2)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 32V73A1A1DS10
PART NUMBER: MC432-0222-0032

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A NON-CRITICAL INDICATOR. ALTERNATE MEANS OF STATUS
INDICATION ARE AVAILABLE. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BN8H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6476 ABORT: 3/3

ITEM: INDICATOR, EVENT (INV/AC BUS #3)
FAILURE MODE: FAILS TO INDICATE PROPER STATUS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) INV DIST & CONT ASSY #3
- 3) R1A1 PANEL
- 4) INDICATOR, EVENT (INV/AC BUS #3)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 32V73A1A1DS12
PART NUMBER: MC432-0222-0032

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A NON-CRITICAL INDICATOR. ALTERNATE MEANS OF STATUS
INDICATION ARE AVAILABLE. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BV8H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6477 ABORT: 3/3

ITEM: INDICATER, EVENT (INVERTER PWR #1)
FAILURE MODE: FAILS TO INDICATE PROPER STATUS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 1BC
- 2) FPCA-1
- 3) R1A1 PANEL
- 4) INDICATER, EVENT (INVERTER PWR 1)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES	
	HDW/FUNC	ABORT
PRELAUNCH:	3/3	RTLS: 3/3
LIFTOFF:	3/3	TAL: 3/3
ONORBIT:	3/3	AOA: 3/3
DEORBIT:	3/3	ATO: 3/3
LANDING/SAFING:	3/3	

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 32V73A1A1DS7
PART NUMBER: MC432-0222-0032

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A NON-CRITICAL INDICATOR. ALTERNATE MEANS OF STATUS
INDICATION ARE AVAILABLE. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BF24A

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6478 ABORT: 3/3

ITEM: INDICATER, EVENT (INVERTER PWR #2)
FAILURE MODE: FAILS TO INDICATE PROPER STATUS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) FPCA-2
- 3) R1A1 PANEL
- 4) INDICATER, EVENT (INVERTER PWR #2)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 32V73A1A1DS9
PART NUMBER: MC432-0222-0032

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A NON-CRITICAL INDICATOR. ALTERNATE MEANS OF STATUS
INDICATION ARE AVAILABLE. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BM24A

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6479 ABORT: 3/3

ITEM: INDICATER, EVENT (INVERTER PWR #3)
FAILURE MODE: FAILS TO INDICATE PROPER STATUS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) FPCA-3
- 3) R1A1 PANEL
- 4) INDICATER, EVENT (INVERTER PWR #3)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	HDW/FUNC	CRITICALITIES	ABORT	HDW/FUNC
PRELAUNCH:	3/3		RTLS:	3/3
LIFTOFF:	3/3		TAL:	3/3
ONORBIT:	3/3		AOA:	3/3
DEORBIT:	3/3		ATO:	3/3
LANDING/SAFING:	3/3			

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 32V73A1A1DS11
PART NUMBER: MC432-0222-0032

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A NON-CRITICAL INDICATOR. ALTERNATE MEANS OF STATUS
INDICATION ARE AVAILABLE. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BU24H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6480 ABORT: 3/3

ITEM: INDICATER, EVENT (PAYLOAD PRI MN B)
FAILURE MODE: FAILS TO INDICATE PROPER STATUS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 2CA
- 2) MAIN DC DIST ASSY #2
- 3) R1A1 PANEL
- 4) INDICATER, EVENT (PAYLOAD PRI MN B)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 32V73A1A1DS15
PART NUMBER: MC432-0222-0016

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A NON-CRITICAL INDICATOR. ALTERNATE MEANS OF STATUS
INDICATION ARE AVAILABLE. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76U13F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6481 ABORT: 3/3

ITEM: INDICATER, EVENT (PAYLOAD PRI MN C)
FAILURE MODE: FAILS TO INDICATE PROPER STATUS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) MAIN DC DIST ASSY #3
- 3) R1A1 PANEL
- 4) INDICATER, EVENT (PAYLOAD PRI MN C)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES	
	HDW/FUNC	ABORT HDW/FUNC
PRELAUNCH:	3/3	RTLS: 3/3
LIFTOFF:	3/3	TAL: 3/3
ONORBIT:	3/3	AOA: 3/3
DEORBIT:	3/3	ATO: 3/3
LANDING/SAFING:	3/3	

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 32V73A1A1DS17
PART NUMBER: MC432-0222-0016

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A NON-CRITICAL INDICATOR. ALTERNATE MEANS OF STATUS
INDICATION ARE AVAILABLE. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76U13D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6482 ABORT: 3/3

ITEM: INDICATER, EVENT (PAYLOAD PRI FC3)
FAILURE MODE: FAILS TO INDICATE PROPER STATUS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) MAIN DC DIST ASSY #3
- 3) R1A1 PANEL
- 4) INDICATER, EVENT (PAYLOAD PRI FC3)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 32V73A1A1DS16
PART NUMBER: MC432-0222-0016

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A NON-CRITICAL INDICATOR. ALTERNATE MEANS OF STATUS
INDICATION ARE AVAILABLE. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76U13C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6483 ABORT: 3/3

ITEM: INDICATER, EVENT (STRUCT RTN)
FAILURE MODE: FAILS TO INDICATE PROPER STATUS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) MAIN DC DIST ASSY #3
- 3) A12 PANEL
- 4) INDICATER, EVENT (STRUCT RTN)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		
	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 36V73A12DS4
PART NUMBER: MC432-0222-0016

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A NON-CRITICAL INDICATOR. ALTERNATE MEANS OF STATUS
INDICATION ARE AVAILABLE. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76U4H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6484 ABORT: 3/3

ITEM: DC VOLTMETER
FAILURE MODE: FAILS TO INDICATE PROPER STATUS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) F9A2 PANEL
- 2) DC VOLTMETER
- 3)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 34V73A9A2M2
PART NUMBER: MC432-0237-0001

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A NON-CRITICAL INDICATOR. ALTERNATE MEANS OF STATUS
INDICATION ARE AVAILABLE. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76B10H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6485 ABORT: 3/3

ITEM: DC AMMETER
FAILURE MODE: FAILS TO INDICATE PROPER STATUS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) F9A2 PANEL
- 2) DC AMMETER
- 3)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 34V73A9A2M3
PART NUMBER: MC432-0237-0003

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK

EFFECTS/RATIONALE:
THIS IS A NON-CRITICAL INDICATOR. ALTERNATE MEANS OF STATUS
INDICATION ARE AVAILABLE. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76B6H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6486 ABORT: 3/3

ITEM: RESISTOR, 1.2K 2W (TO ESS BUS 1BC)
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) MAIN DC DIST ASSY #2
- 3) R1A1 PANEL
- 4) RESISTOR, 1.2K 2W (TO ESS BUS 1BC)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 32V73A1A1A4R1
PART NUMBER: RWR80S1211FR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE LOSS OF CURRENT LIMITING PROTECTION TO CIRCUIT. IN THE CASE OF AN OVERLOAD THIS CIRCUIT COULD BE SWITCHED OFF.

REFERENCES: 76AK24H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6487 ABORT: 3/3

ITEM: RESISTOR, 1.2K 2W (TO ESS BUS 1BC)
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) MAIN DC DIST ASSY #2
- 3) R1A1 PANEL
- 4) RESISTOR, 1.2K 2W (TO ESS BUS 1BC)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 32V73A1A1A4R2
PART NUMBER: RWR80S1211FR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE LOSS OF CURRENT LIMITING PROTECTION TO CIRCUIT. IN THE CASE OF AN OVERLOAD THIS CIRCUIT COULD BE SWITCHED OFF.

REFERENCES: 76AK21H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6488 ABORT: 3/3

ITEM: RESISTOR, 1.2K 2W (TO ESS BUS 2CA)
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) MAIN DC DIST ASSY #3
- 3) R1A1 PANEL
- 4) RESISTOR, 1.2K 2W (TO ESS BUS 2CA)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 32V73A1A1A5R1
PART NUMBER: RWR80S1211FR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE LOSS OF CURRENT LIMITING PROTECTION TO CIRCUIT. IN THE CASE OF AN OVERLOAD THIS CIRCUIT COULD BE SWITCHED OFF.

REFERENCES: 76AM24H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6489 ABORT: 3/3

ITEM: RESISTOR, 1.2K 2W (TO ESS BUS 2CA)
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS A
- 2) MAIN DC DIST ASSY #1
- 3) R1A1 PANEL
- 4) RESISTOR, 1.2K 2W (TO ESS BUS 2CA)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	HDW/FUNC	CRITICALITIES	ABORT	HDW/FUNC
PRELAUNCH:	3/3		RTLS:	3/3
LIFTOFF:	3/3		TAL:	3/3
ONORBIT:	3/3		AOA:	3/3
DEORBIT:	3/3		ATO:	3/3
LANDING/SAFING:	3/3			

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 32V73A1A1A5R2
PART NUMBER: RWR80S1211FR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE LOSS OF CURRENT LIMITING PROTECTION TO CIRCUIT. IN THE CASE OF AN OVERLOAD THIS CIRCUIT COULD BE SWITCHED OFF.

REFERENCES: 76AM21H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6490 ABORT: 3/3

ITEM: RESISTOR, 1.2K 2W (TO ESS BUS 3AB)
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS A
- 2) MAIN DC DIST ASSY #1
- 3) R1A1 PANEL
- 4) RESISTOR, 1.2K 2W (TO ESS BUS 3AB)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		
	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 32V73A1A1A6R2
PART NUMBER: RWR80S1211FR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE LOSS OF CURRENT LIMITING PROTECTION TO CIRCUIT. IN THE CASE OF AN OVERLOAD THIS CIRCUIT COULD BE SWITCHED OFF.

REFERENCES: 76AP24H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6491 ABORT: 3/3

ITEM: RESISTOR, 1.2K 2W (TO ESS BUS 3AB)
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) MAIN DC DIST ASSY #2
- 3) R1A1 PANEL
- 4) RESISTOR, 1.2K 2W (TO ESS BUS 3AB)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 32V73A1A1A6R1
PART NUMBER: RWR80S1211FR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE LOSS OF CURRENT LIMITING PROTECTION TO CIRCUIT. IN THE CASE OF AN OVERLOAD THIS CIRCUIT COULD BE SWITCHED OFF.

REFERENCES: 76AP21H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6492 ABORT: 3/3

ITEM: CURRENT SENSOR, AC 1A
FAILURE MODE: FAILS TO INDICATE PROPER VALUE.

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS #1
- 2) INV DIST & CONT ASSY #1
- 3) CURRENT SENSOR, AC 1A
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A35CS1
PART NUMBER: ME449-0152-0011

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS ITEM IS A NON-CRITICAL MEASUREMENT SENSOR. NO EFFECT ON
CREW/MISSION/VEHICLE.

REFERENCES: 76BG12F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6493 ABORT: 3/3

ITEM: CURRENT SENSOR, AC 1B
FAILURE MODE: FAILS TO INDICATE PROPER VALUE.

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS #1
- 2) INV DIST & CONT ASSY #1
- 3) CURRENT SENSOR, AC 1B
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A35CS2
PART NUMBER: ME449-0152-0011

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS ITEM IS A NON-CRITICAL MEASUREMENT SENSOR. NO EFFECT ON
CREW/MISSION/VEHICLE.

REFERENCES: 76BG12E

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE:	3/11/87	HIGHEST CRITICALITY	HDW/FUNC
SUBSYSTEM:	EPD&C	FLIGHT:	3/3
MDAC ID:	6494	ABORT:	3/3

ITEM: CURRENT SENSOR, AC 1C
FAILURE MODE: FAILS TO INDICATE PROPER VALUE.

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS #1
- 2) INV DIST & CONT ASSY #1
- 3) CURRENT SENSOR, AC 1C
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 81V76A35CS3
PART NUMBER: ME449-0152-0011

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS ITEM IS A NON-CRITICAL MEASUREMENT SENSOR. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 76BG12C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6495 ABORT: 3/3

ITEM: CURRENT SENSOR, AC 2A
FAILURE MODE: FAILS TO INDICATE PROPER VALUE.

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS #2
- 2) INV DIST & CONT ASSY #2
- 3) CURRENT SENSOR, AC 2A
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A36CS1
PART NUMBER: ME449-0152-0011

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS ITEM IS A NON-CRITICAL MEASUREMENT SENSOR. NO EFFECT ON
CREW/MISSION/VEHICLE.

REFERENCES: 76BN12F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6496 ABORT: 3/3

ITEM: CURRENT SENSOR, AC 2B
FAILURE MODE: FAILS TO INDICATE PROPER VALUE.

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS #2
- 2) INV DIST & CONT ASSY #2
- 3) CURRENT SENSOR, AC 2B
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A36CS2
PART NUMBER: ME449-0152-0011

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS ITEM IS A NON-CRITICAL MEASUREMENT SENSOR. NO EFFECT ON
CREW/MISSION/VEHICLE.

REFERENCES: 76BN12E

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6497 ABORT: 3/3

ITEM: CURRENT SENSOR, AC 2C
FAILURE MODE: FAILS TO INDICATE PROPER VALUE.

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS #2
- 2) INV DIST & CONT ASSY #2
- 3) CURRENT SENSOR, AC 2C
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 82V76A36CS3
PART NUMBER: ME449-0152-0011

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS ITEM IS A NON-CRITICAL MEASUREMENT SENSOR. NO EFFECT ON
CREW/MISSION/VEHICLE.

REFERENCES: 76BN12C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6498 ABORT: 3/3

ITEM: CURRENT SENSOR, AC 3A
FAILURE MODE: FAILS TO INDICATE PROPER VALUE.

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS #3
- 2) INV DIST & CONT ASSY #3
- 3) CURRENT SENSOR, AC 3A
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A37CS1
PART NUMBER: ME449-0152-0011

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS ITEM IS A NON-CRITICAL MEASUREMENT SENSOR. NO EFFECT ON
CREW/MISSION/VEHICLE.

REFERENCES: 76BV12F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6499 ABORT: 3/3

ITEM: CURRENT SENSOR, AC 3B
FAILURE MODE: FAILS TO INDICATE PROPER VALUE.

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS #3
- 2) INV DIST & CONT ASSY #3
- 3) CURRENT SENSOR, AC 3B
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	HDW/FUNC	CRITICALITIES	ABORT	HDW/FUNC
PRELAUNCH:	3/3		RTLS:	3/3
LIFTOFF:	3/3		TAL:	3/3
ONORBIT:	3/3		AOA:	3/3
DEORBIT:	3/3		ATO:	3/3
LANDING/SAFING:	3/3			

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A37CS2
PART NUMBER: ME449-0152-0011

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS ITEM IS A NON-CRITICAL MEASUREMENT SENSOR. NO EFFECT ON
CREW/MISSION/VEHICLE.

REFERENCES: 76BV12E

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6500 ABORT: 3/3

ITEM: CURRENT SENSOR, AC 3C
FAILURE MODE: FAILS TO INDICATE PROPER VALUE.

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS #3
- 2) INV DIST & CONT ASSY #3
- 3) CURRENT SENSOR, AC 3C
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 83V76A37CS3
PART NUMBER: ME449-0152-0011

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS ITEM IS A NON-CRITICAL MEASUREMENT SENSOR. NO EFFECT ON
CREW/MISSION/VEHICLE.

REFERENCES: 76BV12C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6501 ABORT: 3/3

ITEM: CURRENT SENSOR, DC (MDDA-1 TO APCA-4)
FAILURE MODE: FAILS TO INDICATE PROPER VALUE.

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS A
- 2) CURRENT SENSOR, DC (MDDA-1 TO APCA-4)
- 3)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	HDW/FUNC	CRITICALITIES	ABORT	HDW/FUNC
PRELAUNCH:	3/3		RTLS:	3/3
LIFTOFF:	3/3		TAL:	3/3
ONORBIT:	3/3		AOA:	3/3
DEORBIT:	3/3		ATO:	3/3
LANDING/SAFING:	3/3			

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 40V76CS4
PART NUMBER: ME449-0152

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS ITEM IS A NON-CRITICAL MEASUREMENT SENSOR. NO EFFECT ON
CREW/MISSION/VEHICLE.

REFERENCES: 76B20C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6502 ABORT: 3/3

ITEM: CURRENT SENSOR, DC (MDDA-1 TO FPCA-1)
FAILURE MODE: FAILS TO INDICATE PROPER VALUE.

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS A
- 2) CURRENT SENSOR, DC (MDDA-1 TO FPCA-1)
- 3)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 40V76CS1
PART NUMBER: ME449-0152

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS ITEM IS A NON-CRITICAL MEASUREMENT SENSOR. NO EFFECT ON
CREW/MISSION/VEHICLE.

REFERENCES: 76E23G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6503 ABORT: 3/3

ITEM: CURRENT SENSOR, DC (MDDA-1 TO MPCA-1)
FAILURE MODE: FAILS TO INDICATE PROPER VALUE.

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS A
- 2) CURRENT SENSOR, DC (MDDA-1 TO MPCA-1)
- 3)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 40V76CS7
PART NUMBER: ME449-0152

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS ITEM IS A NON-CRITICAL MEASUREMENT SENSOR. NO EFFECT ON
CREW/MISSION/VEHICLE.

REFERENCES: 76F23G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6504 ABORT: 3/3

ITEM: CURRENT SENSOR, DC (MDDA-2 TO APCA-5)
FAILURE MODE: FAILS TO INDICATE PROPER VALUE.

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) CURRENT SENSOR, DC (MDDA-2 TO APCA-5)
- 3)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 40V76CS5
PART NUMBER: ME449-0152

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS ITEM IS A NON-CRITICAL MEASUREMENT SENSOR. NO EFFECT ON
CREW/MISSION/VEHICLE.

REFERENCES: 76L20C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6505 ABORT: 3/3

ITEM: CURRENT SENSOR, DC (APCA-2 TO AFT PAYLOAD)
FAILURE MODE: FAILS TO INDICATE PROPER VALUE.

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) CURRENT SENSOR, DC (APCA-2 TO AFT PAYLOAD)
- 3)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 50V76CS10
PART NUMBER: ME449-0152

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS ITEM IS A NON-CRITICAL MEASUREMENT SENSOR. NO EFFECT ON
CREW/MISSION/VEHICLE.

REFERENCES: 76L6G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6506 ABORT: 3/3

ITEM: CURRENT SENSOR, DC (MDDA-2 TO FPCA-2)
FAILURE MODE: FAILS TO INDICATE PROPER VALUE.

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) CURRENT SENSOR, DC (MDDA-2 TO FPCA-2)
- 3)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		
	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 40V76CS2
PART NUMBER: ME449-0152

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS ITEM IS A NON-CRITICAL MEASUREMENT SENSOR. NO EFFECT ON
CREW/MISSION/VEHICLE.

REFERENCES: 76P23G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6507 ABORT: 3/3

ITEM: CURRENT SENSOR, DC (MDDA-2 TO MPCA-2)
FAILURE MODE: FAILS TO INDICATE PROPER VALUE.

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) CURRENT SENSOR, DC (MDDA-2 TO MPCA-2)
- 3)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES	
	HDW/FUNC	ABORT
PRELAUNCH:	3/3	RTLS: 3/3
LIFTOFF:	3/3	TAL: 3/3
ONORBIT:	3/3	AOA: 3/3
DEORBIT:	3/3	ATO: 3/3
LANDING/SAFING:	3/3	

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 40V76CS8
PART NUMBER: ME449-0152

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS ITEM IS A NON-CRITICAL MEASUREMENT SENSOR. NO EFFECT ON
CREW/MISSION/VEHICLE.

REFERENCES: 76R23C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6508 ABORT: 3/3

ITEM: CURRENT SENSOR, DC (MDDA-3 TO APCA-6)
FAILURE MODE: FAILS TO INDICATE PROPER VALUE.

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) CURRENT SENSOR, DC (MDDA-3 TO APCA-6)
- 3)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 40V76CS6
PART NUMBER: ME449-0152

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS ITEM IS A NON-CRITICAL MEASUREMENT SENSOR. NO EFFECT ON
CREW/MISSION/VEHICLE.

REFERENCES: 76Y20C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6509 ABORT: 3/3

ITEM: CURRENT SENSOR, DC (APCA-3 TO AFT PAYLOAD)
FAILURE MODE: FAILS TO INDICATE PROPER VALUE.

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) CURRENT SENSOR, DC (APCA-3 TO AFT PAYLOAD)
- 3)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 50V76CS11
PART NUMBER: ME449-0152

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS ITEM IS A NON-CRITICAL MEASUREMENT SENSOR. NO EFFECT ON
CREW/MISSION/VEHICLE.

REFERENCES: 76Y6G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6510 ABORT: 3/3

ITEM: CURRENT SENSOR, DC (MDDA-3 TO FPCA-3)
FAILURE MODE: FAILS TO INDICATE PROPER VALUE.

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) CURRENT SENSOR, DC (MDDA-3 TO FPCA-3)
- 3)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 40V76CS3
PART NUMBER: ME449-0152

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS ITEM IS A NON-CRITICAL MEASUREMENT SENSOR. NO EFFECT ON
CREW/MISSION/VEHICLE.

REFERENCES: 76AC23G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6511 ABORT: 3/3

ITEM: CURRENT SENSOR, DC (MDDA-3 TO MPCA-3)
FAILURE MODE: FAILS TO INDICATE PROPER VALUE.

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) CURRENT SENSOR, DC (MDDA-3 TO MPCA-3)
- 3)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES	
	HDW/FUNC	ABORT
PRELAUNCH:	3/3	RTLS: 3/3
LIFTOFF:	3/3	TAL: 3/3
ONORBIT:	3/3	AOA: 3/3
DEORBIT:	3/3	ATO: 3/3
LANDING/SAFING:	3/3	

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 40V76CS9
PART NUMBER: ME449-0152

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS ITEM IS A NON-CRITICAL MEASUREMENT SENSOR. NO EFFECT ON
CREW/MISSION/VEHICLE.

REFERENCES: 76AD23D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6512 ABORT: 3/3

ITEM: CIRCUIT BREAKER, 3A (AC 1A TO FWD RCS VALVES)
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS #1
- 2) INV DIST & CONT ASSY #1
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER, 3A (AC 1A TO FWD RCS VALVES)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 85V73A129CB29
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE AS THIS IS THE NORMAL FLIGHT CONFIGURATION.

REFERENCES: 76BH9B (42T12H)

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6513 ABORT: 3/3

ITEM: CIRCUIT BREAKER, 3A (AC 1B TO FWD RCS VALVES)
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS #1
- 2) INV DIST & CONT ASSY #1
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER, 3A (AC 1B TO FWD RCS VALVES)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		
	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 85V73A129CB30
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE AS THIS IS THE NORMAL FLIGHT CONFIGURATION.

REFERENCES: 76BH9B (42T12H)

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6514 ABORT: 3/3

ITEM: CIRCUIT BREAKER, 3A (AC 1C TO FWD RCS VALVES)
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER

SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS #1
- 2) INV DIST & CONT ASSY #1
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER, 3A (AC 1C TO FWD RCS VALVES)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 85V73A129CB31
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE AS THIS IS THE NORMAL FLIGHT CONFIGURATION.

REFERENCES: 76BH9B (42T12H)

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6515 ABORT: 3/3

ITEM: CIRCUIT BREAKER, 3A (AC 2A TO FWD RCS VALVES)
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS #2
- 2) INV DIST & CONT ASSY #2
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER, 3A (AC 2A TO FWD RCS VALVES)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES	
	HDW/FUNC	ABORT
PRELAUNCH:	3/3	RTLS: 3/3
LIFTOFF:	3/3	TAL: 3/3
ONORBIT:	3/3	AOA: 3/3
DEORBIT:	3/3	ATO: 3/3
LANDING/SAFING:	3/3	

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 85V73A129CB32
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE AS THIS IS THE NORMAL FLIGHT CONFIGURATION.

REFERENCES: 76BP13C (42T22H)

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6516 ABORT: 3/3

ITEM: CIRCUIT BREAKER, 3A (AC 2B TO FWD RCS VALVES)
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS #2
- 2) INV DIST & CONT ASSY #2
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER, 3A (AC 2B TO FWD RCS VALVES)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 85V73A129CB33
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE AS THIS IS THE NORMAL FLIGHT CONFIGURATION.

REFERENCES: 76BP12C (42T22H)

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6517 ABORT: 3/3

ITEM: CIRCUIT BREAKER, 3A (AC 2C TO FWD RCS VALVES)
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS #2
- 2) INV DIST & CONT ASSY #2
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER, 3A (AC 2C TO FWD RCS VALVES)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES	
	HDW/FUNC	ABORT
PRELAUNCH:	3/3	RTLS: 3/3
LIFTOFF:	3/3	TAL: 3/3
ONORBIT:	3/3	AOA: 3/3
DEORBIT:	3/3	ATO: 3/3
LANDING/SAFING:	3/3	

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 85V73A129CB34
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE AS THIS IS THE NORMAL FLIGHT CONFIGURATION.

REFERENCES: 76BP12C (42T22H)

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6518 ABORT: 3/3

ITEM: CIRCUIT BREAKER, 3A (AC 3A TO FWD RCS VALVES)
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS #3
- 2) INV DIST & CONT ASSY #3
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER, 3A (AC 3A TO FWD RCS VALVES)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		
	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 85V73A129CB35
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE AS THIS IS THE NORMAL FLIGHT CONFIGURATION.

REFERENCES: 76BW11B (42T22H)

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6519 ABORT: 3/3

ITEM: CIRCUIT BREAKER, 3A (AC 3B TO FWD RCS VALVES)
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS #3
- 2) INV DIST & CONT ASSY #3
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER, 3A (AC 3B TO FWD RCS VALVES)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 85V73A129CB36
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE AS THIS IS THE NORMAL FLIGHT CONFIGURATION.

REFERENCES: 76BW10B (42T22H)

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6520 ABORT: 3/3

ITEM: CIRCUIT BREAKER, 3A (AC 3C TO FWD RCS VALVES)
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS #3
- 2) INV DIST & CONT ASSY #3
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER, 3A (AC 3C TO FWD RCS VALVES)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 85V73A129CB37
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE AS THIS IS THE NORMAL FLIGHT CONFIGURATION.

REFERENCES: 76BW10B (42T22H)

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/2R
MDAC ID: 6521 ABORT: 3/3

ITEM: CIRCUIT BREAKER, 3A (AC 1A TO FWD RCS VALVES)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS #1
- 2) INV DIST & CONT ASSY #1
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER, 3A (AC 1A TO FWD RCS VALVES)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/2R	TAL:	3/3
ONORBIT:	3/2R	AOA:	3/3
DEORBIT:	3/2R	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 85V73A129CB29
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT POWER TO FORWARD RCS VALVES. LOSS OF ALL REDUNDANCY WOULD LIKELY CAUSE LOSS OF MISSION DUE TO INABILITY TO CONTROL FORWARD RCS PROP TANKS AND THEREFORE FORWARD RCS JET FIRING.

REFERENCES: 76BH9B (42T12H)

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/2R
MDAC ID: 6522 ABORT: 3/3

ITEM: CIRCUIT BREAKER, 3A (AC 1B TO FWD RCS VALVES)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS #1
- 2) INV DIST & CONT ASSY #1
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER, 3A (AC 1B TO FWD RCS VALVES)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/2R	TAL:	3/3
ONORBIT:	3/2R	AOA:	3/3
DEORBIT:	3/2R	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 85V73A129CB30
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT POWER TO FORWARD RCS VALVES. LOSS OF ALL REDUNDANCY WOULD LIKELY CAUSE LOSS OF MISSION DUE TO INABILITY TO CONTROL FORWARD RCS PROP TANKS AND THEREFORE FORWARD RCS JET FIRING.

REFERENCES: 76BH9B (42T12H)

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/2R
MDAC ID: 6523 ABORT: 3/3

ITEM: CIRCUIT BREAKER, 3A (AC 1C TO FWD RCS VALVES)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS #1
- 2) INV DIST & CONT ASSY #1
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER, 3A (AC 1C TO FWD RCS VALVES)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/2R	TAL:	3/3
ONORBIT:	3/2R	AOA:	3/3
DEORBIT:	3/2R	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 85V73A129CB31
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT POWER TO FORWARD RCS VALVES. LOSS OF ALL REDUNDANCY WOULD LIKELY CAUSE LOSS OF MISSION DUE TO INABILITY TO CONTROL FORWARD RCS PROP TANKS AND THEREFORE FORWARD RCS JET FIRING.

REFERENCES: 76BH9B (42T12H)

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/2R
MDAC ID: 6524 ABORT: 3/3

ITEM: CIRCUIT BREAKER, 3A (AC 2A TO FWD RCS VALVES)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS #2
- 2) INV DIST & CONT ASSY #2
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER, 3A (AC 2A TO FWD RCS VALVES)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/2R	TAL:	3/3
ONORBIT:	3/2R	AOA:	3/3
DEORBIT:	3/2R	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 85V73A129CB32
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT POWER TO FORWARD RCS VALVES. LOSS OF ALL REDUNDANCY WOULD LIKELY CAUSE LOSS OF MISSION DUE TO INABILITY TO CONTROL FORWARD RCS PROP TANKS AND THEREFORE FORWARD RCS JET FIRING.

REFERENCES: 76BP13C (42T22H)

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/2R
MDAC ID: 6525 ABORT: 3/3

ITEM: CIRCUIT BREAKER, 3A (AC 2B TO FWD RCS VALVES)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS #2
- 2) INV DIST & CONT ASSY #2
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER, 3A (AC 2B TO FWD RCS VALVES)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES	
	HDW/FUNC	ABORT
PRELAUNCH:	3/3	RTLS: 3/3
LIFTOFF:	3/2R	TAL: 3/3
ONORBIT:	3/2R	AOA: 3/3
DEORBIT:	3/2R	ATO: 3/3
LANDING/SAFING:	3/3	

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 85V73A129CB33
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT POWER TO FORWARD RCS VALVES. LOSS OF ALL REDUNDANCY WOULD LIKELY CAUSE LOSS OF MISSION DUE TO INABILITY TO CONTROL FORWARD RCS PROP TANKS AND THEREFORE FORWARD RCS JET FIRING.

REFERENCES: 76BP12C (42T22H)

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/2R
MDAC ID: 6526 ABORT: 3/3

ITEM: CIRCUIT BREAKER, 3A (AC 2C TO FWD RCS VALVES)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS #2
- 2) INV DIST & CONT ASSY #2
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER, 3A (AC 2C TO FWD RCS VALVES)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/2R	TAL:	3/3
ONORBIT:	3/2R	AOA:	3/3
DEORBIT:	3/2R	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 85V73A129CB34
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT POWER TO FORWARD RCS VALVES. LOSS OF ALL REDUNDANCY WOULD LIKELY CAUSE LOSS OF MISSION DUE TO INABILITY TO CONTROL FORWARD RCS PROP TANKS AND THEREFORE FORWARD RCS JET FIRING.

REFERENCES: 76BP12C (42T22H)

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/2R
MDAC ID: 6527 ABORT: 3/3

ITEM: CIRCUIT BREAKER, 3A (AC 3A TO FWD RCS VALVES)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS #3
- 2) INV DIST & CONT ASSY #3
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER, 3A (AC 3A TO FWD RCS VALVES)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/2R	TAL:	3/3
ONORBIT:	3/2R	AOA:	3/3
DEORBIT:	3/2R	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 85V73A129CB35
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT POWER TO FORWARD RCS VALVES. LOSS OF ALL REDUNDANCY WOULD LIKELY CAUSE LOSS OF MISSION DUE TO INABILITY TO CONTROL FORWARD RCS PROP TANKS AND THEREFORE FORWARD RCS JET FIRING.

REFERENCES: 76AW11B (42T22H)

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/2R
MDAC ID: 6528 ABORT: 3/3

ITEM: CIRCUIT BREAKER, 3A (AC 3B TO FWD RCS VALVES)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS #3
- 2) INV DIST & CONT ASSY #3
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER, 3A (AC 3B TO FWD RCS VALVES)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/2R	TAL:	3/3
ONORBIT:	3/2R	AOA:	3/3
DEORBIT:	3/2R	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 85V73A129CB36
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT POWER TO FORWARD RCS VALVES. LOSS OF ALL REDUNDANCY WOULD LIKELY CAUSE LOSS OF MISSION DUE TO INABILITY TO CONTROL FORWARD RCS PROP TANKS AND THEREFORE FORWARD RCS JET FIRING.

REFERENCES: 76AW10B (42T22H)

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/2R
MDAC ID: 6529 ABORT: 3/3

ITEM: CIRCUIT BREAKER, 3A (AC 3C TO FWD RCS VALVES)
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) AC BUS #3
- 2) INV DIST & CONT ASSY #3
- 3) MA73C PANEL
- 4) CIRCUIT BREAKER, 3A (AC 3C TO FWD RCS VALVES)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/2R	TAL:	3/3
ONORBIT:	3/2R	AOA:	3/3
DEORBIT:	3/2R	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 85V73A129CB37
PART NUMBER: MC454-0026-2030

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT POWER TO FORWARD RCS VALVES. LOSS OF ALL REDUNDANCY WOULD LIKELY CAUSE LOSS OF MISSION DUE TO INABILITY TO CONTROL FORWARD RCS PROP TANKS AND THEREFORE FORWARD RCS JET FIRING.

REFERENCES: 76AW10B (42T22H)

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6530 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE I TO APCA-1
FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS A
- 2) ALCA-1
- 3) HYBRID DRIVER TYPE I TO APCA-1
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/1R	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 54V76A121AR
PART NUMBER: MC477-0261-0002

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT POWER TO THE SRB BUS.
LOSS OF ALL POWER TO THE SRB BUS COULD CAUSE LOSS OF CREW/VEHICLE
DURING LAUNCH PHASE.

REFERENCES: 48A21G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6531 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE I TO APCA-1
FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS A
- 2) ALCA-1
- 3) HYBRID DRIVER TYPE I TO APCA-1
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 54V76A121AR
PART NUMBER: MC477-0261-0002

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE AS
CIRCUIT IS NORMALLY ON DURING LAUNCH PHASE.

REFERENCES: 48A21G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6532 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE I TO APCA-1
FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS A
- 2) ALCA-1
- 3) HYBRID DRIVER TYPE I TO APCA-1
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/1R	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 54V76A121AR
PART NUMBER: MC477-0261-0002

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT POWER TO THE SRB BUS.
LOSS OF ALL POWER TO THE SRB BUS COULD CAUSE LOSS OF CREW/VEHICLE
DURING LAUNCH PHASE.

REFERENCES: 48B21G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6533 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE I TO APCA-1
FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS A
- 2) ALCA-1
- 3) HYBRID DRIVER TYPE I TO APCA-1
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 54V76A121AR
PART NUMBER: MC477-0261-0002

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE AS THIS CIRCUIT IS NORMALLY ON DURING LAUNCH PHASE.

REFERENCES: 48B21G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6534 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE I
FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) ALCA-2
- 3) HYBRID DRIVER TYPE I TO APCA-2
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/1R	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 55V76A122AR
PART NUMBER: MC477-0261-0002

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT POWER TO THE SRB BUS.
LOSS OF ALL POWER TO THE SRB BUS COULD CAUSE LOSS OF CREW/VEHICLE
DURING LAUNCH PHASE.

REFERENCES: 48BN21G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6535 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE I
FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) ALCA-2
- 3) HYBRID DRIVER TYPE I TO APCA-2
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 55V76A122AR
PART NUMBER: MC477-0261-0002

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE AS THIS CIRCUIT IS NORMALLY ON DURING LAUNCH PHASE.

REFERENCES: 48BN21G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6536 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE I
FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) ALCA-2
- 3) HYBRID DRIVER TYPE I TO APCA-2
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/1R	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 55V76A122AR
PART NUMBER: MC477-0261-0002

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT POWER TO THE SRB BUS.
LOSS OF ALL POWER TO THE SRB BUS COULD CAUSE LOSS OF CREW/VEHICLE
DURING LAUNCH PHASE.

REFERENCES: 48BP21G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6537 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE I
FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) ALCA-2
- 3) HYBRID DRIVER TYPE I TO APCA-2
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 55V76A122AR
PART NUMBER: MC477-0261-0002

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE AS THIS CIRCUIT IS NORMALLY ON DURING LAUNCH PHASE.

REFERENCES: 48BP21G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6538 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE II TO APCA-1 & APCA-3
FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) ALCA-3
- 3) HYBRID DRIVER TYPE II TO APCA-1 & APCA-3
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/1R	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 56V76A123AR
PART NUMBER: MC477-0262-0002

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT POWER TO SRB BUS.
LOSS OF ALL POWER TO SRB BUS COULD CAUSE LOSS OF CREW/VEHICLE
DURING LAUNCH PHASE.

REFERENCES: 48A21C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6539 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE II TO APCA-1 & APCA-3
FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) ALCA-3
- 3) HYBRID DRIVER TYPE II TO APCA-1 & APCA-3
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 56V76A123AR
PART NUMBER: MC477-0262-0002

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE. THIS
CIRCUIT IS NORMALLY POWERED ON DURING LAUNCH PHASE.

REFERENCES: 48A21C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6540 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE II TO APCA-1 & APCA-3
FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) ALCA-3
- 3) HYBRID DRIVER TYPE II TO APCA-1 & APCA-3
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/1R	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 56V76A123AR
PART NUMBER: MC477-0262-0002

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT POWER TO SRB BUS.
LOSS OF ALL POWER TO SRB BUS COULD CAUSE LOSS OF CREW/VEHICLE
DURING LAUNCH PHASE.

REFERENCES: 48B21C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6541 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE II TO APCA-1 & APCA-3
FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) ALCA-3
- 3) HYBRID DRIVER TYPE II TO APCA-1 & APCA-3
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 56V76A123AR
PART NUMBER: MC477-0262-0002

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE. THIS
CIRCUIT IS NORMALLY POWERED ON DURING LAUNCH PHASE.

REFERENCES: 48B21C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6542 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE II TO APCA-2 & APCA-3
FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) ALCA-3
- 3) HYBRID DRIVER TYPE II TO APCA-2 & APCA-3
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/1R	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 56V76A123AR
PART NUMBER: MC477-0262-0002

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT POWER TO SRB BUS.
LOSS OF ALL POWER TO SRB BUS COULD CAUSE LOSS OF CREW/VEHICLE
DURING LAUNCH PHASE.

REFERENCES: 48BN21C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6543 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE II TO APCA-2 & APCA-3
FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) ALCA-3
- 3) HYBRID DRIVER TYPE II TO APCA-2 & APCA-3
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 56V76A123AR
PART NUMBER: MC477-0262-0002

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE. THIS
CIRCUIT IS NORMALLY POWERED ON DURING LAUNCH PHASE.

REFERENCES: 48BN21C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6544 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE II TO APCA-2 & APCA-3
FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) ALCA-3
- 3) HYBRID DRIVER TYPE II TO APCA-2 & APCA-3
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/1R	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 56V76A123AR
PART NUMBER: MC477-0262-0002

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT POWER TO SRB BUS.
LOSS OF ALL POWER TO SRB BUS COULD CAUSE LOSS OF CREW/VEHICLE
DURING LAUNCH PHASE.

REFERENCES: 48BP21C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6545 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE II TO APCA-2 & APCA-3
FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) ESS BUS 3AB
- 2) ALCA-3
- 3) HYBRID DRIVER TYPE II TO APCA-2 & APCA-3
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 56V76A123AR
PART NUMBER: MC477-0262-0002

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE. THIS CIRCUIT IS NORMALLY POWERED ON DURING LAUNCH PHASE.

REFERENCES: 48BP21C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6546 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE V TO HYBRID DRIVER TYPE II
FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) ALCA-3
- 3) HYBRID DRIVER TYPE V TO HYBRID DRIVER TYPE II
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		
	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/1R	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 56V76A123AR
PART NUMBER: MC477-0265-0002

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT POWER TO SRB BUS.
LOSS OF ALL POWER TO SRB BUS COULD CAUSE LOSS OF CREW/VEHICLE
DURING LAUNCH PHASE.

REFERENCES: 48A21B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6547 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE V TO HYBRID DRIVER TYPE II
FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) ALCA-3
- 3) HYBRID DRIVER TYPE V TO HYBRID DRIVER TYPE II
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 56V76A123AR
PART NUMBER: MC477-0265-0002

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE. THIS
CIRCUIT IS NORMALLY POWERED ON DURING LAUNCH PHASE.

REFERENCES: 48A21B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6548 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE V TO HYBRID DRIVER TYPE II
FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) ALCA-3
- 3) HYBRID DRIVER TYPE V TO HYBRID DRIVER TYPE II
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/1R	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 56V76A123AR
PART NUMBER: MC477-0265-0002

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT POWER TO SRB BUS.
LOSS OF ALL POWER TO SRB BUS COULD CAUSE LOSS OF CREW/VEHICLE
DURING LAUNCH PHASE.

REFERENCES: 48B21B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6549 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE V TO HYBRID DRIVER TYPE II
FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) ALCA-3
- 3) HYBRID DRIVER TYPE V TO HYBRID DRIVER TYPE II
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 56V76A123AR
PART NUMBER: MC477-0265-0002

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE. THIS
CIRCUIT IS NORMALLY POWERED ON DURING LAUNCH PHASE.

REFERENCES: 48B21B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6550 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE V TO HYBRID DRIVER TYPE II
FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) ALCA-3
- 3) HYBRID DRIVER TYPE V TO HYBRID DRIVER TYPE II
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/1R	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 56V76A123AR
PART NUMBER: MC477-0265-0002

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT POWER TO SRB BUS.
LOSS OF ALL POWER TO SRB BUS COULD CAUSE LOSS OF CREW/VEHICLE
DURING LAUNCH PHASE.

REFERENCES: 48BN21B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6551 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE V TO HYBRID DRIVER TYPE II
FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) ALCA-3
- 3) HYBRID DRIVER TYPE V TO HYBRID DRIVER TYPE II
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 56V76A123AR
PART NUMBER: MC477-0265-0002

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE. THIS
CIRCUIT IS NORMALLY POWERED ON DURING LAUNCH PHASE.

REFERENCES: 48BN21B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6552 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE V TO HYBRID DRIVER TYPE II
FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) ALCA-3
- 3) HYBRID DRIVER TYPE V TO HYBRID DRIVER TYPE II
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/1R	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 56V76A123AR
PART NUMBER: MC477-0265-0002

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT POWER TO SRB BUS.
LOSS OF ALL POWER TO SRB BUS COULD CAUSE LOSS OF CREW/VEHICLE
DURING LAUNCH PHASE.

REFERENCES: 48BP21B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6553 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE V TO HYBRID DRIVER TYPE II
FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) ALCA-3
- 3) HYBRID DRIVER TYPE V TO HYBRID DRIVER TYPE II
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 56V76A123AR
PART NUMBER: MC477-0265-0002

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE.
CIRCUIT IS NORMALLY POWERED ON DURING LAUNCH PHASE.

REFERENCES: 48BP21B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6554 ABORT: 3/3

ITEM: RESISTOR, 5.1K TO APCA-1
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) APCA-3
- 3) RESISTOR, 5.1K TO APCA-1
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 56V76A133A1R19
PART NUMBER: RLR07C5101GR

CAUSES: PIECE-PART STRUCTURAL FAILURE, CONTAMINATION, THERMAL SHOCK, MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A NON-CRITICAL MEASUREMENT ITEM AND HAS NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 48A21F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6555 ABORT: 3/3

ITEM: RESISTOR, 5.1K TO APCA-1
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) APCA-3
- 3) RESISTOR, 5.1K TO APCA-1
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 56V76A133A1R52
PART NUMBER: RLR07C5101GR

CAUSES: PIECE-PART STRUCTURAL FAILURE, CONTAMINATION, THERMAL SHOCK, MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A NON-CRITICAL MEASUREMENT ITEM AND HAS NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 48B21F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6556 ABORT: 3/3

ITEM: RESISTOR, 5.1K TO APCA-2
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) APCA-3
- 3) RESISTOR, 5.1K TO APCA-2
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 56V76A133A1R30
PART NUMBER: RLR07C5101GR

CAUSES: PIECE-PART STRUCTURAL FAILURE, CONTAMINATION, THERMAL SHOCK, MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A NON-CRITICAL MEASUREMENT ITEM AND HAS NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 48BN21F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6557 ABORT: 3/3

ITEM: RESISTOR, 5.1K TO APCA-2
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) APCA-3
- 3) RESISTOR, 5.1K TO APCA-2
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 56V76A133A1R31
PART NUMBER: RLR07C5101GR

CAUSES: PIECE-PART STRUCTURAL FAILURE, CONTAMINATION, THERMAL SHOCK, MECH SHOCK

EFFECTS/RATIONALE:

THIS IS A NON-CRITICAL MEASUREMENT ITEM AND HAS NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 48BP21F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6558 ABORT: 3/3

ITEM: RESISTOR, 7.5K TO DC RETURN
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS A
- 2) APCA-1
- 3) ALCA-3
- 4) RESISTOR, 7.5K TO DC RETURN
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 56V76A123R
PART NUMBER: RLR07C7501GR

CAUSES: PIECE-PART STRUCTURAL FAILURE, CONTAMINATION, THERMAL SHOCK, MECH SHOCK

EFFECTS/RATIONALE:

THIS BLEED-OFF RESISTOR PREVENTS A FALSE SIGNAL TO THE SRB POWER CONTROL. THIS FAILURE IS NON-CRITICAL TO FLIGHT OPERATIONS.

REFERENCES: 48A21A

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6559 ABORT: 3/3

ITEM: RESISTOR, 7.5K TO DC RETURN
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS A
- 2) APCA-1
- 3) ALCA-3
- 4) RESISTOR, 7.5K TO DC RETURN
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		
	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 56V76A123R
PART NUMBER: RLR07C7501GR

CAUSES: PIECE-PART STRUCTURAL FAILURE, CONTAMINATION, THERMAL SHOCK, MECH SHOCK

EFFECTS/RATIONALE:

THIS BLEED-OFF RESISTOR PREVENTS A FALSE SIGNAL TO THE SRB POWER CONTROL. THIS FAILURE IS NON-CRITICAL TO FLIGHT OPERATIONS.

REFERENCES: 48B21A

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6560 ABORT: 3/3

ITEM: RESISTOR, 7.5K TO DC RETURN
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) APCA-2
- 3) ALCA-3
- 4) RESISTOR, 7.5K TO DC RETURN
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 56V76A123R
PART NUMBER: RLR07C7501GR

CAUSES: PIECE-PART STRUCTURAL FAILURE, CONTAMINATION, THERMAL SHOCK, MECH SHOCK

EFFECTS/RATIONALE:

THIS BLEED-OFF RESISTOR PREVENTS A FALSE SIGNAL TO THE SRB POWER CONTROL. THIS FAILURE IS NON-CRITICAL TO FLIGHT OPERATIONS.

REFERENCES: 48BN21B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6561 ABORT: 3/3

ITEM: RESISTOR, 7.5K TO DC RETURN
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) APCA-2
- 3) ALCA-3
- 4) RESISTOR, 7.5K TO DC RETURN
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 56V76A123R
PART NUMBER: RLR07C7501GR

CAUSES: PIECE-PART STRUCTURAL FAILURE, CONTAMINATION, THERMAL SHOCK, MECH SHOCK

EFFECTS/RATIONALE:

THIS BLEED-OFF RESISTOR PREVENTS A FALSE SIGNAL TO THE SRB POWER CONTROL. THIS FAILURE IS NON-CRITICAL TO FLIGHT OPERATIONS.

REFERENCES: 48BP21B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6562 ABORT: 3/3

ITEM: RESISTOR, 15K TO ALCA-3
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS A
- 2) APCA-1
- 3) RESISTOR, 15K TO ALCA-3
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/1R	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 54V76A131A1R45
PART NUMBER: RBR56L15001BR

CAUSES: PIECE-PART STRUCTURAL FAILURE, CONTAMINATION, THERMAL SHOCK, MECH SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF CONTROL OF REDUNDANT POWER TO SRB BUS. LOSS OF ALL POWER TO SRB BUS WOULD LIKELY CAUSE LOSS OF CREW/VEHICLE DURING LAUNCH PHASE.

REFERENCES: 48A16G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6563 ABORT: 3/3

ITEM: RESISTOR, 15K TO ALCA-3
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS A
- 2) APCA-1
- 3) RESISTOR, 15K TO ALCA-3
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/1R	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 54V76A131A1R46
PART NUMBER: RBR56L15001BR

CAUSES: PIECE-PART STRUCTURAL FAILURE, CONTAMINATION, THERMAL SHOCK, MECH SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF CONTROL OF REDUNDANT POWER TO SRB BUS. LOSS OF ALL POWER TO SRB BUS WOULD LIKELY CAUSE LOSS OF CREW/VEHICLE DURING LAUNCH PHASE.

REFERENCES: 48B16G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6564 ABORT: 3/3

ITEM: RESISTOR, 15K TO ALCA-3
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) APCA-2
- 3) RESISTOR, 15K TO ALCA-3
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/1R	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 55V76A132A1R44
PART NUMBER: RBR56L15001BR

CAUSES: PIECE-PART STRUCTURAL FAILURE, CONTAMINATION, THERMAL SHOCK, MECH SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF CONTROL OF REDUNDANT POWER TO SRB BUS. LOSS OF ALL POWER TO SRB BUS WOULD LIKELY CAUSE LOSS OF CREW/VEHICLE DURING LAUNCH PHASE.

REFERENCES: 48BN16G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6565 ABORT: 3/3

ITEM: RESISTOR, 15K TO ALCA-3
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) APCA-2
- 3) RESISTOR, 15K TO ALCA-3
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/1R	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 55V76A132A1R45
PART NUMBER: RBR56L15001BR

CAUSES: PIECE-PART STRUCTURAL FAILURE, CONTAMINATION, THERMAL SHOCK, MECH SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF CONTROL OF REDUNDANT POWER TO SRB BUS. LOSS OF ALL POWER TO SRB BUS WOULD LIKELY CAUSE LOSS OF CREW/VEHICLE DURING LAUNCH PHASE.

REFERENCES: 48BP16G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6566 ABORT: 3/3

ITEM: RESISTOR, 2.2K
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) APCA-2
- 3) RESISTOR, 2.2K
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 55V76A132A1R36

PART NUMBER:

CAUSES: PIECE-PART STRUCTURAL FAILURE, CONTAMINATION, THERMAL SHOCK, MECH SHOCK

EFFECTS/RATIONALE:

THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. WORST CASE FAILURE WOULD CAUSE DELAY OF LAUNCH.

REFERENCES: 48G21G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6567 ABORT: 3/3

ITEM: RESISTOR, 2.2K
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) APCA-3
- 3) RESISTOR, 2.2K
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 56V76A133A1R24
PART NUMBER:

CAUSES: PIECE-PART STRUCTURAL FAILURE, CONTAMINATION, THERMAL SHOCK, MECH SHOCK

EFFECTS/RATIONALE:

THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. WORST CASE FAILURE WOULD CAUSE DELAY OF LAUNCH.

REFERENCES: 48G21C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6568 ABORT: 3/3

ITEM: RESISTOR, 1.8K
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) APCA-2
- 3) RESISTOR, 1.8K
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 55V76A132A1R35
PART NUMBER:

CAUSES: PIECE-PART STRUCTURAL FAILURE, CONTAMINATION, THERMAL SHOCK, MECH SHOCK

EFFECTS/RATIONALE:

THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. WORST CASE FAILURE WOULD CAUSE DELAY OF LAUNCH.

REFERENCES: 48G21G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6569 ABORT: 3/3

ITEM: RESISTOR, 1.8K
FAILURE MODE: FAILS OPEN, SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) APCA-3
- 3) RESISTOR, 1.8K
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 56V76A133A1R23
PART NUMBER:

CAUSES: PIECE-PART STRUCTURAL FAILURE, CONTAMINATION, THERMAL SHOCK, MECH SHOCK

EFFECTS/RATIONALE:

THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. WORST CASE FAILURE WOULD CAUSE DELAY OF LAUNCH.

REFERENCES: 48G21C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6570 ABORT: 3/3

ITEM: RESISTOR, 1.8K
FAILURE MODE: FAILS OPEN, SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) APCA-2
- 3) RESISTOR, 1.8K
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 55V76A132A1R37
PART NUMBER:

CAUSES: PIECE-PART STRUCTURAL FAILURE, CONTAMINATION, THERMAL SHOCK, MECH SHOCK

EFFECTS/RATIONALE:

THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. WORST CASE FAILURE WOULD CAUSE DELAY OF LAUNCH.

REFERENCES: 48H21G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6571 ABORT: 3/3

ITEM: RESISTOR, 1.8K
FAILURE MODE: FAILS OPEN, SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) APCA-3
- 3) RESISTOR, 1.8K
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 56V76A133A1R26
PART NUMBER:

CAUSES: PIECE-PART STRUCTURAL FAILURE, CONTAMINATION, THERMAL SHOCK, MECH SHOCK

EFFECTS/RATIONALE:

THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. WORST CASE FAILURE WOULD CAUSE DELAY OF LAUNCH.

REFERENCES: 48H21C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6572 ABORT: 3/3

ITEM: RESISTOR, 2.2K
FAILURE MODE: FAILS OPEN, SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) APCA-2
- 3) RESISTOR, 2.2K
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 55V76A132A1R38
PART NUMBER:

CAUSES: PIECE-PART STRUCTURAL FAILURE, CONTAMINATION, THERMAL SHOCK, MECH SHOCK

EFFECTS/RATIONALE:

THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. WORST CASE FAILURE WOULD CAUSE DELAY OF LAUNCH.

REFERENCES: 48H21G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6573 ABORT: 3/3

ITEM: RESISTOR, 2.2K
FAILURE MODE: FAILS OPEN, SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) APCA-3
- 3) RESISTOR, 2.2K
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 56V76A133A1R27

PART NUMBER:

CAUSES: PIECE-PART STRUCTURAL FAILURE, CONTAMINATION, THERMAL SHOCK, MECH SHOCK

EFFECTS/RATIONALE:

THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. WORST CASE FAILURE WOULD CAUSE DELAY OF LAUNCH.

REFERENCES: 48H21C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6574 ABORT: 3/3

ITEM: RESISTOR, 1.2K
FAILURE MODE: FAILS OPEN, SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONT BUS AB1
- 2) F6 PANEL
- 3) RESISTOR, 1.2K
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 34V73A6A11R1
PART NUMBER: RLR42C1201GM

CAUSES: PIECE-PART STRUCTURAL FAILURE, CONTAMINATION, THERMAL SHOCK, MECH SHOCK

EFFECTS/RATIONALE:

THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 48N24E

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6575 ABORT: 3/3

ITEM: RESISTOR, 1.2K
FAILURE MODE: FAILS OPEN, SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONT BUS BC2
- 2) F6 PANEL
- 3) RESISTOR, 1.2K
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 34V73A6A11R2
PART NUMBER: RLR42C1201GM

CAUSES: PIECE-PART STRUCTURAL FAILURE, CONTAMINATION, THERMAL SHOCK, MECH SHOCK

EFFECTS/RATIONALE:

THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 48N24D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6576 ABORT: 3/3

ITEM: RESISTOR, 1.2K
FAILURE MODE: FAILS OPEN, SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONT BUS AB1
- 2) F6 PANEL
- 3) RESISTOR, 1.2K
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 34V73A6A11R3
PART NUMBER: RLR42C1201GM

CAUSES: PIECE-PART STRUCTURAL FAILURE, CONTAMINATION, THERMAL SHOCK, MECH SHOCK

EFFECTS/RATIONALE:

THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 48Q24E

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6577 ABORT: 3/3

ITEM: RESISTOR, 1.2K
FAILURE MODE: FAILS OPEN, SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONT BUS BC1
- 2) F6 PANEL
- 3) RESISTOR, 1.2K
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 34V73A6A11R4
PART NUMBER: RLR42C1201GM

CAUSES: PIECE-PART STRUCTURAL FAILURE, CONTAMINATION, THERMAL SHOCK, MECH SHOCK

EFFECTS/RATIONALE:

THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 48Q24D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6578 ABORT: 3/3

ITEM: RPC, 20A TO APCA-1
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) APCA-3
- 3) RPC, 20A TO APCA-1
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/1R	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [NA] C [P]

LOCATION: 56V76A133RPC27
PART NUMBER: MC450-0017-2200

CAUSES: PIECE-PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK,
THERMAL SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT POWER TO AN SRB BUS.
LOSS OF ALL POWER TO SRB BUS COULD CAUSE LOSS OF CREW/VEHICLE DUE
TO INABILITY TO CONTROL THE SRBS DURING LAUNCH PHASE.

REFERENCES: 48A21F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6579 ABORT: 3/3

ITEM: RPC, 20A TO APCA-1
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) APCA-3
- 3) RPC, 20A TO APCA-1
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 56V76A133RPC27
PART NUMBER: MC450-0017-2200

CAUSES: PIECE-PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK,
THERMAL SHOCK

EFFECTS/RATIONALE:

NO EFFECT ON CREW/MISSION/VEHICLE AS THIS ITEM IS COMMANDED "ON"
DURING FLIGHT OPERATIONS.

REFERENCES: 48A21F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6580 ABORT: 3/3

ITEM: RPC, 20A TO RELAY
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS A
- 2) APCA-1
- 3) RPC, 20A TO RELAY
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/1R	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [NA] C [P]

LOCATION: 54V76A131RPC3
PART NUMBER: MC450-0017-2200

CAUSES: PIECE-PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK,
THERMAL SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT POWER TO AN SRB BUS.
LOSS OF ALL POWER TO SRB BUS COULD CAUSE LOSS OF CREW/VEHICLE DUE
TO INABILITY TO CONTROL THE SRBS DURING LAUNCH PHASE.

REFERENCES: 48A18G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6581 ABORT: 3/3

ITEM: RPC, 20A TO RELAY
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS A
- 2) APCA-1
- 3) RPC, 20A TO RELAY
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 54V76A131RPC3
PART NUMBER: MC450-0017-2200

CAUSES: PIECE-PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK,
THERMAL SHOCK

EFFECTS/RATIONALE:

NO EFFECT ON CREW/MISSION/VEHICLE AS THIS ITEM IS COMMANDED "ON"
DURING FLIGHT OPERATIONS.

REFERENCES: 48A18G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6582 ABORT: 3/3

ITEM: RPC, 20A TO APCA-1
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) APCA-3
- 3) RPC, 20A TO APCA-1
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/1R	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [NA] C [P]

LOCATION: 56V76A133RPC25
PART NUMBER: MC450-0017-2200

CAUSES: PIECE-PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK,
THERMAL SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT POWER TO AN SRB BUS.
LOSS OF ALL POWER TO SRB BUS COULD CAUSE LOSS OF CREW/VEHICLE DUE
TO INABILITY TO CONTROL THE SRBS DURING LAUNCH PHASE.

REFERENCES: 48B21F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6583 ABORT: 3/3

ITEM: RPC, 20A TO APCA-1
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) APCA-3
- 3) RPC, 20A TO APCA-1
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 56V76A133RPC25
PART NUMBER: MC450-0017-2200

CAUSES: PIECE-PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK,
THERMAL SHOCK

EFFECTS/RATIONALE:

NO EFFECT ON CREW/MISSION/VEHICLE AS THIS ITEM IS COMMANDED "ON"
DURING FLIGHT OPERATIONS.

REFERENCES: 48B21F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6584 ABORT: 3/3

ITEM: RPC, 20A TO RELAY
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS A
- 2) APCA-1
- 3) RPC, 20A TO RELAY
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/1R	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [NA] C [P]

LOCATION: 54V76A131RPC4
PART NUMBER: MC450-0017-2200

CAUSES: PIECE-PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK,
THERMAL SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT POWER TO AN SRB BUS.
LOSS OF ALL POWER TO SRB BUS COULD CAUSE LOSS OF CREW/VEHICLE DUE
TO INABILITY TO CONTROL THE SRBS DURING LAUNCH PHASE.

REFERENCES: 48B18G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6585 ABORT: 3/3

ITEM: RPC, 20A TO RELAY
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS A
- 2) APCA-1
- 3) RPC, 20A TO RELAY
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 54V76A131RPC4
PART NUMBER: MC450-0017-2200

CAUSES: PIECE-PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK,
THERMAL SHOCK

EFFECTS/RATIONALE:

NO EFFECT ON CREW/MISSION/VEHICLE AS THIS ITEM IS COMMANDED "ON"
DURING FLIGHT OPERATIONS.

REFERENCES: 48B18G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6586 ABORT: 3/3

ITEM: RPC, 20A TO ORB BUS C
FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) APCA-2
- 3) RPC, 20A TO ORB BUS C
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/1R	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 55V76A132RPC44
PART NUMBER: MC450-0017-2200

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT POWER TO SRB RATE GYRO ASSY. EACH SRB HAS REDUNDANT RATE GYRO ASSEMBLIES. LOSS OF ALL REDUNDANCY MAY CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO CONTROL SRBS.

REFERENCES: 48G22G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6587 ABORT: 3/3

ITEM: RPC, 20A TO ORB BUS C
FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) APCA-2
- 3) RPC, 20A TO ORB BUS C
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 55V76A132RPC44
PART NUMBER: MC450-0017-2200

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE AS THIS ITEM IS NORMALLY ON DURING FLIGHT OPERATIONS.

REFERENCES: 48G22G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6588 ABORT: 3/3

ITEM: RPC, 20A TO ORB BUS C
FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) APCA-3
- 3) RPC, 20A TO ORB BUS C
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/1R	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 56V76A133RPC3
PART NUMBER: MC450-0017-2200

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT POWER TO SRB RATE GYRO ASSY. EACH SRB HAS REDUNDANT RATE GYRO ASSEMBLIES. LOSS OF ALL REDUNDANCY MAY CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO CONTROL SRBS.

REFERENCES: 48G22B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6589 ABORT: 3/3

ITEM: RPC, 20A TO ORB BUS C
FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) APCA-3
- 3) RPC, 20A TO ORB BUS C
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 56V76A133RPC3
PART NUMBER: MC450-0017-2200

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE AS THIS
ITEM IS NORMALLY ON DURING FLIGHT OPERATIONS.

REFERENCES: 48G22B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6590 ABORT: 3/3

ITEM: RPC, 20A TO ORB BUS C
FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) APCA-2
- 3) RPC, 20A TO ORB BUS C
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/1R	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 55V76A132RPC45
PART NUMBER: MC450-0017-2200

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT POWER TO SRB RATE GYRO ASSY. EACH SRB HAS REDUNDANT RATE GYRO ASSEMBLIES. LOSS OF ALL REDUNDANCY MAY CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO CONTROL SRBS.

REFERENCES: 48H22G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6591 ABORT: 3/3

ITEM: RPC, 20A TO ORB BUS C
FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) APCA-2
- 3) RPC, 20A TO ORB BUS C
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 55V76A132RPC45
PART NUMBER: MC450-0017-2200

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE AS THIS ITEM IS NORMALLY ON DURING FLIGHT OPERATIONS.

REFERENCES: 48H22G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6592 ABORT: 3/3

ITEM: RPC, 20A TO ORB BUS C
FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) APCA-3
- 3) RPC, 20A TO ORB BUS C
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/1R	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 56V76A133RPC4
PART NUMBER: MC450-0017-2200

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT POWER TO SRB RATE GYRO ASSY. EACH SRB HAS REDUNDANT RATE GYRO ASSEMBLIES. LOSS OF ALL REDUNDANCY MAY CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO CONTROL SRBS.

REFERENCES: 48H22B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6593 ABORT: 3/3

ITEM: RPC, 20A TO ORB BUS C
FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) APCA-3
- 3) RPC, 20A TO ORB BUS C
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 56V76A133RPC4
PART NUMBER: MC450-0017-2200

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE AS THIS ITEM IS NORMALLY ON DURING FLIGHT OPERATIONS.

REFERENCES: 48H22B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE:	3/11/87	HIGHEST CRITICALITY	HDW/FUNC
SUBSYSTEM:	EPD&C	FLIGHT:	3/1R
MDAC ID:	6594	ABORT:	3/3

ITEM: RPC, 20A TO APCA-2
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) APCA-3
- 3) RPC, 20A TO APCA-2
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/1R	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [NA] C [P]

LOCATION: 56V76A133RPC26
PART NUMBER: MC450-0017-2200

CAUSES: PIECE-PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK,
THERMAL SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT POWER TO AN SRB BUS.
LOSS OF ALL POWER TO SRB BUS COULD CAUSE LOSS OF CREW/VEHICLE DUE
TO INABILITY TO CONTROL THE SRBS DURING LAUNCH PHASE.

REFERENCES: 48BN21F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6595 ABORT: 3/3

ITEM: RPC, 20A TO APCA-2
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) APCA-3
- 3) RPC, 20A TO APCA-2
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 56V76A133RPC26
PART NUMBER: MC450-0017-2200

CAUSES: PIECE-PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK,
THERMAL SHOCK

EFFECTS/RATIONALE:

NO EFFECT ON CREW/MISSION/VEHICLE AS THIS ITEM IS COMMANDED "ON"
DURING FLIGHT OPERATIONS.

REFERENCES: 48BN21F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6596 ABORT: 3/3

ITEM: RPC, 20A TO RELAY
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) APCA-2
- 3) RPC, 20A TO RELAY
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/1R	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [NA] C [P]

LOCATION: 55V76A132RPC5
PART NUMBER: MC450-0017-2200

CAUSES: PIECE-PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK,
THERMAL SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT POWER TO AN SRB BUS.
LOSS OF ALL POWER TO SRB BUS COULD CAUSE LOSS OF CREW/VEHICLE DUE
TO INABILITY TO CONTROL THE SRBS DURING LAUNCH PHASE.

REFERENCES: 48BN18G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6597 ABORT: 3/3

ITEM: RPC, 20A TO RELAY
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) APCA-2
- 3) RPC, 20A TO RELAY
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 55V76A132RPC5
PART NUMBER: MC450-0017-2200

CAUSES: PIECE-PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK,
THERMAL SHOCK

EFFECTS/RATIONALE:

NO EFFECT ON CREW/MISSION/VEHICLE AS THIS ITEM IS COMMANDED "ON"
DURING FLIGHT OPERATIONS.

REFERENCES: 48BN18G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6598 ABORT: 3/3

ITEM: RPC, 20A TO APCA-2
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) APCA-3
- 3) RPC, 20A TO APCA-2
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/1R	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [NA] C [P]

LOCATION: 56V76A133RPC24
PART NUMBER: MC450-0017-2200

CAUSES: PIECE-PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK,
THERMAL SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT POWER TO AN SRB BUS.
LOSS OF ALL POWER TO SRB BUS COULD CAUSE LOSS OF CREW/VEHICLE DUE
TO INABILITY TO CONTROL THE SRBS DURING LAUNCH PHASE.

REFERENCES: 48BP21F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6599 ABORT: 3/3

ITEM: RPC, 20A TO APCA-2
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) APCA-3
- 3) RPC, 20A TO APCA-2
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 56V76A133RPC24
PART NUMBER: MC450-0017-2200

CAUSES: PIECE-PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK,
THERMAL SHOCK

EFFECTS/RATIONALE:

NO EFFECT ON CREW/MISSION/VEHICLE AS THIS ITEM IS COMMANDED "ON"
DURING FLIGHT OPERATIONS.

REFERENCES: 48BP21F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6600 ABORT: 3/3

ITEM: RPC, 20A TO RELAY
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) APCA-2
- 3) RPC, 20A TO RELAY
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/1R	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [NA] C [P]

LOCATION: 55V76A132RPC4
PART NUMBER: MC450-0017-2200

CAUSES: PIECE-PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK,
THERMAL SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT POWER TO AN SRB BUS.
LOSS OF ALL POWER TO SRB BUS COULD CAUSE LOSS OF CREW/VEHICLE DUE
TO INABILITY TO CONTROL THE SRBS DURING LAUNCH PHASE.

REFERENCES: 48BP18H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6601 ABORT: 3/3

ITEM: RPC, 20A TO RELAY
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) APCA-2
- 3) RPC, 20A TO RELAY
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 55V76A132RPC4
PART NUMBER: MC450-0017-2200

CAUSES: PIECE-PART STRUCTURAL FAILURE, VIBRATION, MECH SHOCK,
THERMAL SHOCK

EFFECTS/RATIONALE:

NO EFFECT ON CREW/MISSION/VEHICLE AS THIS ITEM IS COMMANDED "ON"
DURING FLIGHT OPERATIONS.

REFERENCES: 48BP18H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6602

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/1R
ABORT: 3/3

ITEM: DIODE TO ORB BUS C
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER

SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) APCA-3
- 3) DIODE TO ORB BUS C
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/1R	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 56V76A133A3CR9
PART NUMBER:

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT POWER TO SRB RATE GYRO ASSY. EACH SRB HAS REDUNDANT RATE GYRO ASSEMBLIES. LOSS OF ALL REDUNDANCY MAY CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO CONTROL SRBS.

REFERENCES: 48G21B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6603

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

ITEM: DIODE TO ORB BUS C
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER

SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) APCA-3
- 3) DIODE TO ORB BUS C
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 56V76A133A3CR9

PART NUMBER:

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 48G21B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6604 ABORT: 3/3

ITEM: DIODE TO ORB BUS C
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) APCA-2
- 3) DIODE TO ORB BUS C
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/1R	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 55V76A132A3CR6
PART NUMBER:

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT POWER TO SRB RATE GYRO ASSY. EACH SRB HAS REDUNDANT RATE GYRO ASSEMBLIES. LOSS OF ALL REDUNDANCY MAY CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO CONTROL SRBS.

REFERENCES: 48G22F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6605 ABORT: 3/3

ITEM: DIODE TO ORB BUS C
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) APCA-2
- 3) DIODE TO ORB BUS C
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES	
	HDW/FUNC	ABORT
PRELAUNCH:	3/3	RTLS: 3/3
LIFTOFF:	3/3	TAL: 3/3
ONORBIT:	3/3	AOA: 3/3
DEORBIT:	3/3	ATO: 3/3
LANDING/SAFING:	3/3	

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 55V76A132A3CR6
PART NUMBER:

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:
THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 48G22F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6606 ABORT: 3/3

ITEM: DIODE TO ORB BUS C
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) APCA-2
- 3) DIODE TO ORB BUS C
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/1R	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 55V76A132A3CR7
PART NUMBER:

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT POWER TO SRB RATE GYRO ASSY. EACH SRB HAS REDUNDANT RATE GYRO ASSEMBLIES. LOSS OF ALL REDUNDANCY MAY CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO CONTROL SRBS.

REFERENCES: 48H22F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6607 ABORT: 3/3

ITEM: DIODE TO ORB BUS C
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) APCA-2
- 3) DIODE TO ORB BUS C
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 55V76A132A3CR7
PART NUMBER:

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:
THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 48H22F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6608 ABORT: 3/3

ITEM: DIODE TO ORB BUS C
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) APCA-3
- 3) DIODE TO ORB BUS C
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/1R	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 56V76A133A3CR10
PART NUMBER:

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANT POWER TO SRB RATE GYRO ASSY. EACH SRB HAS REDUNDANT RATE GYRO ASSEMBLIES. LOSS OF ALL REDUNDANCY MAY CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO CONTROL SRBS.

REFERENCES: 48H21B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6609 ABORT: 3/3

ITEM: DIODE TO ORB BUS C
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS C
- 2) APCA-3
- 3) DIODE TO ORB BUS C
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 56V76A133A3CR10
PART NUMBER:

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS FAILURE WOULD HAVE NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 48H21B

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6610 ABORT: 3/3

ITEM: DIODE
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) RSS BUS
- 2) F6 PANEL
- 3) DIODE
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 34V73A6CR

PART NUMBER:

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. NO EFFECT ON
CREW/MISSION/VEHICLE.

REFERENCES: 48N23C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6611 ABORT: 3/3

ITEM: DIODE
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER

SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) RSS BUS
- 2) F6 PANEL
- 3) DIODE
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 34V73A6CR
PART NUMBER:

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. NO EFFECT ON
CREW/MISSION/VEHICLE.

REFERENCES: 48N23C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6612 ABORT: 3/3

ITEM: DIODE
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) RSS BUS
- 2) F6 PANEL
- 3) DIODE
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 34V73A6CR
PART NUMBER:

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. NO EFFECT ON
CREW/MISSION/VEHICLE.

REFERENCES: 48P23C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6613 ABORT: 3/3

ITEM: DIODE
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) RSS BUS
- 2) F6 PANEL
- 3) DIODE
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 34V73A6CR
PART NUMBER:

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. NO EFFECT ON
CREW/MISSION/VEHICLE.

REFERENCES: 48P23C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6614 ABORT: 3/3

ITEM: DIODE
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) RSS BUS
- 2) F6 PANEL
- 3) DIODE
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 34V73A6CR
PART NUMBER:

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. NO EFFECT ON
CREW/MISSION/VEHICLE.

REFERENCES: 48Q23C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6615 ABORT: 3/3

ITEM: DIODE
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) RSS BUS
- 2) F6 PANEL
- 3) DIODE
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 34V73A6CR

PART NUMBER:

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. NO EFFECT ON
CREW/MISSION/VEHICLE.

REFERENCES: 48Q23C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6616 ABORT: 3/3

ITEM: DIODE
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) RSS BUS
- 2) F6 PANEL
- 3) DIODE
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 34V73A6CR
PART NUMBER:

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. NO EFFECT ON
CREW/MISSION/VEHICLE.

REFERENCES: 48R23C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6617

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

ITEM: DIODE
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER

SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) RSS BUS
- 2) F6 PANEL
- 3) DIODE
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	HDW/FUNC	CRITICALITIES	ABORT	HDW/FUNC
PRELAUNCH:	3/3		RTLS:	3/3
LIFTOFF:	3/3		TAL:	3/3
ONORBIT:	3/3		AOA:	3/3
DEORBIT:	3/3		ATO:	3/3
LANDING/SAFING:	3/3			

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 34V73A6CR
PART NUMBER:

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. NO EFFECT ON
CREW/MISSION/VEHICLE.

REFERENCES: 48R23C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6618 ABORT: 3/3

ITEM: DIODE
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) RSS BUS
- 2) F6 PANEL
- 3) DIODE
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 34V73A6CR

PART NUMBER:

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. NO EFFECT ON CREW/MISSION/VEHICLE.

REFERENCES: 48BJ2G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6619 ABORT: 3/3

ITEM: DIODE
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) RSS BUS
- 2) F6 PANEL
- 3) DIODE
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 34V73A6CR
PART NUMBER:

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. NO EFFECT ON
CREW/MISSION/VEHICLE.

REFERENCES: 48BJ2G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6620 ABORT: 3/3

ITEM: DIODE
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) RSS BUS
- 2) F6 PANEL
- 3) DIODE
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 34V73A6CR
PART NUMBER:

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. NO EFFECT ON
CREW/MISSION/VEHICLE.

REFERENCES: 48BF2G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87
SUBSYSTEM: EPD&C
MDAC ID: 6621

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: 3/3
ABORT: 3/3

ITEM: DIODE
FAILURE MODE: SHORTS

LEAD ANALYST: K. SCHMECKPEPER

SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) RSS BUS
- 2) F6 PANEL
- 3) DIODE
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 34V73A6CR
PART NUMBER:

CAUSES: CONTAMINATION, VIBRATION, MECH SHOCK, THERMAL STRESS

EFFECTS/RATIONALE:

THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. NO EFFECT ON
CREW/MISSION/VEHICLE.

REFERENCES: 48BF2G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6622 ABORT: 3/3

ITEM: RELAY TO OIA BUS
FAILURE MODE: FAILS TO TRANSFER

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUSES A & C
- 2) APCA-1
- 3) RELAY TO OIA BUS
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/1R	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 54V76A131K8
PART NUMBER: MC455-0129-0001

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL SHOCK

EFFECTS/RATIONALE:

A FAILURE IN THE "OPEN" POSITION WOULD CAUSE THE LOSS OF
REDUNDANT POWER TO AN SRB BUS. LOSS OF ALL POWER TO THE SRB BUS
COULD CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO CONTROL THE
SRBS DURING LAUNCH PHASE.

REFERENCES: 48A17F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6623 ABORT: 3/3

ITEM: RELAY TO OIA BUS
FAILURE MODE: INADVERTENT TRANSFER

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUSES A & C
- 2) APCA-1
- 3) RELAY TO OIA BUS
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/1R	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 54V76A131K8
PART NUMBER: MC455-0129-0001

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL SHOCK

EFFECTS/RATIONALE:

A FAILURE IN THE "OPEN" POSITION WOULD CAUSE THE LOSS OF
REDUNDANT POWER TO AN SRB BUS. LOSS OF ALL POWER TO THE SRB BUS
COULD CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO CONTROL THE
SRBS DURING LAUNCH PHASE.

REFERENCES: 48A17F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6624 ABORT: 3/3

ITEM: RELAY TO OIA BUS
FAILURE MODE: FAILS TO TRANSFER

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUSES A & C
- 2) APCA-1
- 3) RELAY TO OIA BUS
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		
	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/1R	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 54V76A131K9
PART NUMBER: MC455-0129-0001

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL SHOCK

EFFECTS/RATIONALE:

A FAILURE IN THE "OPEN" POSITION WOULD CAUSE THE LOSS OF
REDUNDANT POWER TO AN SRB BUS. LOSS OF ALL POWER TO THE SRB BUS
COULD CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO CONTROL THE
SRBS DURING LAUNCH PHASE.

REFERENCES: 48B17F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6625 ABORT: 3/3

ITEM: RELAY TO OIA BUS
FAILURE MODE: INADVERTENT TRANSFER

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUSES A & C
- 2) APCA-1
- 3) RELAY TO OIA BUS
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/1R	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 54V76A131K9
PART NUMBER: MC455-0129-0001

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL SHOCK

EFFECTS/RATIONALE:

A FAILURE IN THE "OPEN" POSITION WOULD CAUSE THE LOSS OF
REDUNDANT POWER TO AN SRB BUS. LOSS OF ALL POWER TO THE SRB BUS
COULD CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO CONTROL THE
SRBS DURING LAUNCH PHASE.

REFERENCES: 48B17F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6626 ABORT: 3/3

ITEM: RELAY TO OIB BUS
FAILURE MODE: FAILS TO TRANSFER

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUSES B & C
- 2) APCA-2
- 3) RELAY TO OIB BUS
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/1R	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 55V76A132K10
PART NUMBER: MC455-0129-0001

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL SHOCK

EFFECTS/RATIONALE:

A FAILURE IN THE "OPEN" POSITION WOULD CAUSE THE LOSS OF
REDUNDANT POWER TO AN SRB BUS. LOSS OF ALL POWER TO THE SRB BUS
COULD CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO CONTROL THE
SRBS DURING LAUNCH PHASE.

REFERENCES: 48BN17F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6627 ABORT: 3/3

ITEM: RELAY TO OIB BUS
FAILURE MODE: INADVERTENT TRANSFER

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUSES B & C
- 2) APCA-2
- 3) RELAY TO OIB BUS
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/1R	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 55V76A132K10
PART NUMBER: MC455-0129-0001

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL SHOCK

EFFECTS/RATIONALE:

A FAILURE IN THE "OPEN" POSITION WOULD CAUSE THE LOSS OF
REDUNDANT POWER TO AN SRB BUS. LOSS OF ALL POWER TO THE SRB BUS
COULD CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO CONTROL THE
SRBS DURING LAUNCH PHASE.

REFERENCES: 48BN17F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6628 ABORT: 3/3

ITEM: RELAY TO OIB BUS
FAILURE MODE: FAILS TO TRANSFER

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUSES B & C
- 2) APCA-2
- 3) RELAY TO OIB BUS
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	HDW/FUNC	CRITICALITIES	ABORT	HDW/FUNC
PRELAUNCH:	3/3		RTLS:	3/3
LIFTOFF:	3/1R		TAL:	3/3
ONORBIT:	3/3		AOA:	3/3
DEORBIT:	3/3		ATO:	3/3
LANDING/SAFING:	3/3			

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 55V76A132K9
PART NUMBER: MC455-0129-0001

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL SHOCK

EFFECTS/RATIONALE:

A FAILURE IN THE "OPEN" POSITION WOULD CAUSE THE LOSS OF
REDUNDANT POWER TO AN SRB BUS. LOSS OF ALL POWER TO THE SRB BUS
COULD CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO CONTROL THE
SRBS DURING LAUNCH PHASE.

REFERENCES: 48BP17F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6629 ABORT: 3/3

ITEM: RELAY TO OIB BUS
FAILURE MODE: INADVERTENT TRANSFER

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUSES B & C
- 2) APCA-2
- 3) RELAY TO OIB BUS
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/1R	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 55V76A132K9
PART NUMBER: MC455-0129-0001

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL SHOCK

EFFECTS/RATIONALE:

A FAILURE IN THE "OPEN" POSITION WOULD CAUSE THE LOSS OF
REDUNDANT POWER TO AN SRB BUS. LOSS OF ALL POWER TO THE SRB BUS
COULD CAUSE LOSS OF CREW/VEHICLE DUE TO INABILITY TO CONTROL THE
SRBS DURING LAUNCH PHASE.

REFERENCES: 48BP17F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6630 ABORT: 3/3

ITEM: RELAY TO ACA #1 & ACA #3
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONTROL BUSES AB1 & BC2
- 2) F6 PANEL
- 3) RELAY TO ACA #1 & ACA #3
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 34V73A6K1A
PART NUMBER: MC455-0129

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL SHOCK

EFFECTS/RATIONALE:

THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. NO EFFECT ON
CREW/MISSION/VEHICLE.

REFERENCES: 48N23C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6631 ABORT: 3/3

ITEM: RELAY TO ACA #1 & ACA #3
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONTROL BUSES AB1 & BC2
- 2) F6 PANEL
- 3) RELAY TO ACA #1 & ACA #3
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 34V73A6K1A
PART NUMBER: MC455-0129

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL SHOCK

EFFECTS/RATIONALE:

THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. NO EFFECT ON
CREW/MISSION/VEHICLE.

REFERENCES: 48N23C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6632 ABORT: 3/3

ITEM: RELAY TO ACA #1 & ACA #3
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONTROL BUSES AB1 & BC2
- 2) F6 PANEL
- 3) RELAY TO ACA #1 & ACA #3
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES	
	HDW/FUNC	ABORT
PRELAUNCH:	3/3	RTLS: 3/3
LIFTOFF:	3/3	TAL: 3/3
ONORBIT:	3/3	AOA: 3/3
DEORBIT:	3/3	ATO: 3/3
LANDING/SAFING:	3/3	

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 34V73A6K1B
PART NUMBER: MC455-0129

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL SHOCK

EFFECTS/RATIONALE:

THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. NO EFFECT ON
CREW/MISSION/VEHICLE.

REFERENCES: 48P23C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6633 ABORT: 3/3

ITEM: RELAY TO ACA #1 & ACA #3
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONTROL BUSES AB1 & BC2
- 2) F6 PANEL
- 3) RELAY TO ACA #1 & ACA #3
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES	
	HDW/FUNC	ABORT
PRELAUNCH:	3/3	RTLS: 3/3
LIFTOFF:	3/3	TAL: 3/3
ONORBIT:	3/3	AOA: 3/3
DEORBIT:	3/3	ATO: 3/3
LANDING/SAFING:	3/3	

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 34V73A6K1B
PART NUMBER: MC455-0129

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL SHOCK

EFFECTS/RATIONALE:

THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. NO EFFECT ON
CREW/MISSION/VEHICLE.

REFERENCES: 48P23C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6634 ABORT: 3/3

ITEM: RELAY TO ACA #1 & ACA #2
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONT BUS AB1 & BC1
- 2) F6 PANEL
- 3) RELAY TO ACA #1 & ACA #2
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 34V73A6K3B
PART NUMBER: MC455-0129

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL SHOCK

EFFECTS/RATIONALE:

THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. NO EFFECT ON
CREW/MISSION/VEHICLE.

REFERENCES: 48Q23C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6635 ABORT: 3/3

ITEM: RELAY TO ACA #1 & ACA #2
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONT BUS AB1 & BC1
- 2) F6 PANEL
- 3) RELAY TO ACA #1 & ACA #2
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES	
	HDW/FUNC	ABORT
PRELAUNCH:	3/3	RTLS: 3/3
LIFTOFF:	3/3	TAL: 3/3
ONORBIT:	3/3	AOA: 3/3
DEORBIT:	3/3	ATO: 3/3
LANDING/SAFING:	3/3	

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 34V73A6K3B
PART NUMBER: MC455-0129

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL SHOCK

EFFECTS/RATIONALE:

THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. NO EFFECT ON
CREW/MISSION/VEHICLE.

REFERENCES: 48Q23C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6636 ABORT: 3/3

ITEM: RELAY TO ACA #1 & ACA #2
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONT BUS AB1 & BC1
- 2) F6 PANEL
- 3) RELAY TO ACA #1 & ACA #2
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 34V73A6K3A
PART NUMBER: MC455-0129

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL SHOCK

EFFECTS/RATIONALE:

THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. NO EFFECT ON
CREW/MISSION/VEHICLE.

REFERENCES: 48R23C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6637 ABORT: 3/3

ITEM: RELAY TO ACA #1 & ACA #2
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONT BUS AB1 & BC1
- 2) F6 PANEL
- 3) RELAY TO ACA #1 & ACA #2
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 34V73A6K3A
PART NUMBER: MC455-0129

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL SHOCK

EFFECTS/RATIONALE:

THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. NO EFFECT ON
CREW/MISSION/VEHICLE.

REFERENCES: 48R23C

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6638 ABORT: 3/3

ITEM: RELAY TO ACA #1 & ACA #3
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONT BUS AB1 & BC2
- 2) F6 PANEL
- 3) RELAY TO ACA #1 & ACA #3
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		
	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 34V73A6K2A
PART NUMBER: MC455-0129

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL SHOCK

EFFECTS/RATIONALE:

THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. NO EFFECT ON
CREW/MISSION/VEHICLE.

REFERENCES: 48BF2G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6639 ABORT: 3/3

ITEM: RELAY TO ACA #1 & ACA #3
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONT BUS AB1 & BC2
- 2) F6 PANEL
- 3) RELAY TO ACA #1 & ACA #3
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		
	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 34V73A6K2A
PART NUMBER: MC455-0129

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL SHOCK

EFFECTS/RATIONALE:

THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. NO EFFECT ON
CREW/MISSION/VEHICLE.

REFERENCES: 48BF2G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6640 ABORT: 3/3

ITEM: RELAY TO ACA #1 & ACA #2
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONT BUS AB1 & BC1
- 2) F6 PANEL
- 3) RELAY TO ACA #1 & ACA #2
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 34V73A6K2B
PART NUMBER: MC455-0129

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL SHOCK

EFFECTS/RATIONALE:

THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. NO EFFECT ON
CREW/MISSION/VEHICLE.

REFERENCES: 48BJ2G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6641 ABORT: 3/3

ITEM: RELAY TO ACA #1 & ACA #2
FAILURE MODE: FAILS CLOSED

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONT BUS AB1 & BC1
- 2) F6 PANEL
- 3) RELAY TO ACA #1 & ACA #2
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 34V73A6K2B
PART NUMBER: MC455-0129

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL SHOCK

EFFECTS/RATIONALE:

THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. NO EFFECT ON
CREW/MISSION/VEHICLE.

REFERENCES: 48BJ2G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6642 ABORT: 3/3

ITEM: ACA #1 - CHANNEL 39
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONT BUS AB1
- 2) F6 PANEL
- 3) ACA #1 - CHANNEL 39
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 30V73A16
PART NUMBER:

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL SHOCK

EFFECTS/RATIONALE:

THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. NO EFFECT ON
CREW/MISSION/VEHICLE.

REFERENCES: 48N21E

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6643 ABORT: 3/3

ITEM: ACA #3 - CHANNEL 39
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONT BUS BC2
- 2) F6 PANEL
- 3) ACA #3 - CHANNEL 39
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 30V73A18
PART NUMBER:

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL SHOCK

EFFECTS/RATIONALE:

THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. NO EFFECT ON
CREW/MISSION/VEHICLE.

REFERENCES: 48N21D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6644 ABORT: 3/3

ITEM: RSS LIGHTS - RANGE SAFE ARM
FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONT BUS AB1 & BC2
- 2) F6A8 PANEL
- 3) RSS LIGHTS - RANGE SAFE ARM
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES	
	HDW/FUNC	ABORT
PRELAUNCH:	3/3	RTLS: 3/3
LIFTOFF:	3/3	TAL: 3/3
ONORBIT:	3/3	AOA: 3/3
DEORBIT:	3/3	ATO: 3/3
LANDING/SAFING:	3/3	

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 34V73A6A8DS53
PART NUMBER:

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL SHOCK

EFFECTS/RATIONALE:

THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. NO EFFECT ON
CREW/MISSION/VEHICLE.

REFERENCES: 48N22E

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6645 ABORT: 3/3

ITEM: ACA #1 - CHANNEL 35
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONT BUS AB1
- 2) F6 PANEL
- 3) ACA #1 - CHANNEL 35
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 30V73A16
PART NUMBER:

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL SHOCK

EFFECTS/RATIONALE:

THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. NO EFFECT ON
CREW/MISSION/VEHICLE.

REFERENCES: 48Q21E

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6646 ABORT: 3/3

ITEM: ACA #2 - CHANNEL 39
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONT BUS BC1
- 2) F6 PANEL
- 3) ACA #2 - CHANNEL 39
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 30V73A17
PART NUMBER:

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL SHOCK

EFFECTS/RATIONALE:

THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. NO EFFECT ON
CREW/MISSION/VEHICLE.

REFERENCES: 48Q21D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6647 ABORT: 3/3

ITEM: RSS LIGHTS - RANGE SAFE ARM
FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) CONT BUS AB1 & BC1
- 2) F6A8 PANEL
- 3) RSS LIGHTS - RANGE SAFE ARM
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES	
	HDW/FUNC	ABORT
PRELAUNCH:	3/3	RTLS: 3/3
LIFTOFF:	3/3	TAL: 3/3
ONORBIT:	3/3	AOA: 3/3
DEORBIT:	3/3	ATO: 3/3
LANDING/SAFING:	3/3	

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 34V73A6A8DS3
PART NUMBER:

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK, THERMAL SHOCK

EFFECTS/RATIONALE:

THIS ITEM IS IN A NON-CRITICAL INDICATOR CIRCUIT. NO EFFECT ON
CREW/MISSION/VEHICLE.

REFERENCES: 48Q22E

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6648 ABORT: 3/3

ITEM: SWITCH, PUSHBUTTON (ET SEP)
FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) C3A7 PANEL
- 2) SWITCH, PUSHBUTTON (ET SEP)
- 3)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/1R	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [NA] C [F]

LOCATION: 35V73A3A7S4
PART NUMBER: ME452-0061-4133

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD HAVE NO EFFECT AS THE MODE SWITCH MUST BE
PLACED IN "MANUAL" POSITION BEFORE THIS SWITCH CAN BE ENERGIZED.
LOSS OF CREW/VEHICLE AFTER MULTIPLE FAILURES IS POSSIBLE DUE TO
PREMATURE SEPERATION OF THE ET.

REFERENCES: 48BR14H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 1/1
MDAC ID: 6649 ABORT: 3/3

ITEM: SWITCH, PUSHBUTTON (ET SEP)
FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) C3A7 PANEL
- 2) SWITCH, PUSHBUTTON (ET SEP)
- 3)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	1/1	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [NA] C [F]

LOCATION: 35V73A3A7S4
PART NUMBER: ME452-0061-4133

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF MANUAL CONTROL OF ET SEPERATION
FUNCTION. CREW CAN OVERRIDE WITH GPC COMMAND. ET SEP FAILURE
COULD RESULT IN LOSS OF CREW/VEHICLE.

REFERENCES: 48BR14H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6650 ABORT: 3/3

ITEM: SWITCH, PUSHBUTTON (SRB SEP)
FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) C3A7 PANEL
- 2) SWITCH, PUSHBUTTON (SRB SEP)
- 3)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/1R	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [NA] C [F]

LOCATION: 35V73A3A7S2
PART NUMBER: ME452-0061-4133

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD HAVE NO EFFECT AS THE MODE SWITCH MUST BE
PLACED IN "MANUAL" BEFORE SRB SEP COULD OCCUR. LOSS OF
CREW/VEHICLE COULD OCCUR IF SRBS ARE SEPERATED PREMATURELY.

REFERENCES: 48BR10H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 1/1
MDAC ID: 6651 ABORT: 3/3

ITEM: SWITCH, PUSHBUTTON (SRB SEP)
FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) C3A7 PANEL
- 2) SWITCH, PUSHBUTTON (SRB SEP)
- 3)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	1/1	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [NA] C [F]

LOCATION: 35V73A3A7S2
PART NUMBER: ME452-0061-4133

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF MANUAL CONTROL OF SRB SEP
FUNCTION DURING A GPC INHIBIT CONDITION. IF THE CREW COULD NOT
REMOVE THE INHIBIT CONDITION, THIS WOULD RESULT IN LOSS OF
CREW/VEHICLE.HRO

REFERENCES: 48BR10H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 1/1
MDAC ID: 6652 ABORT: 3/3

ITEM: SWITCH, TOGGLE 3P2P LEVER LOCK (ET SEP SLCT)
FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) C3A7 PANEL
- 2) SWITCH, TOGGLE 3P2P LEVER LOCK (ET SEP SLCT)
- 3)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	1/1	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [NA] C [F]

LOCATION: 35V73A3A7S3
PART NUMBER: ME452-0102-7352

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANCY IN ET SEP FUNCTION.
IF MANUAL ET SEP WERE REQUIRED, IT COULD NOT BE PERFORMED
RESULTING IN LOSS OF CREW/VEHICLE.

REFERENCES: 48BR17G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6653 ABORT: 3/3

ITEM: SWITCH, TOGGLE 3P2P LEVER LOCK (ET SEP SLCT)
FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) C3A7 PANEL
- 2) SWITCH, TOGGLE 3P2P LEVER LOCK (ET SEP SLCT)
- 3)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC	
PRELAUNCH:	3/3	RTLS:	3/3	
LIFTOFF:	3/1R	TAL:	3/3	
ONORBIT:	3/3	AOA:	3/3	
DEORBIT:	3/3	ATO:	3/3	
LANDING/SAFING:	3/3			

REDUNDANCY SCREENS: A [1] B [NA] C [F]

LOCATION: 35V73A3A7S3
PART NUMBER: ME452-0102-7352

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD HAVE NO EFFECT AS A PUSHBUTTON MUST BE PUSHED
TO INITIATE ET SEP. A SECOND FAILURE COULD INITIATE PREMATURE ET
SEP RESULTING IN LOSS OF CREW/VEHICLE.

REFERENCES: 48BR17G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 1/1
MDAC ID: 6654 ABORT: 3/3

ITEM: SWITCH, TOGGLE 3P2P LEVER LOCK (ET SEP SLCT)
FAILURE MODE: FAILS OFF - SHORTS POLE TO POLE OR GND

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) C3A7 PANEL
- 2) SWITCH, TOGGLE 3P2P LEVER LOCK (ET SEP SLCT)
- 3)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	1/1	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [NA] C [F]

LOCATION: 35V73A3A7S3
PART NUMBER: ME452-0102-7352

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF REDUNDANCY IN ET SEP FUNCTION.
IF MANUAL ET SEP WERE REQUIRED, IT COULD NOT BE PERFORMED
RESULTING IN LOSS OF CREW/VEHICLE.

REFERENCES: 48BR17G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 1/1
MDAC ID: 6655 ABORT: 3/3

ITEM: SWITCH, TOGGLE 3P2P (SRB SEP SLCT)
FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) C3A7 PANEL
- 2) SWITCH, TOGGLE 3P2P (SRB SEP SLCT)
- 3)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	1/1	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [NA] C [F]

LOCATION: 35V73A3A7S1
PART NUMBER: ME452-0102-7301

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE LOSS OF MANUAL SRB SEP FUNCTION DURING A
GPC INHIBIT CONDITION. IF THE CREW COULD NOT FLY OUT OF THE
INHIBIT REGION, SRB SEP WILL NOT OCCUR LEADING TO LOSS OF
CREW/VEHICLE.

REFERENCES: 48BR10G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 2/1R
MDAC ID: 6656 ABORT: 3/3

ITEM: SWITCH, TOGGLE 3P2P (SRB SEP SLCT)
FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) C3A7 PANEL
- 2) SWITCH, TOGGLE 3P2P (SRB SEP SLCT)
- 3)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		
	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	2/1R	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [NA] C [F]

LOCATION: 35V73A3A7S1
PART NUMBER: ME452-0102-7301

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK

EFFECTS/RATIONALE:

FIRST FAILURE WOULD HAVE NO EFFECT AS A PUSHBUTTON WOULD HAVE TO
BE PUSHED TO INITIATE MANUAL SRB SEP. A SECOND FAILURE COULD
CAUSE PREMATURE SRB SEP RESULTING IN LOSS OF CREW/VEHICLE.

REFERENCES: 48BR10G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 1/1
MDAC ID: 6657 ABORT: 3/3

ITEM: SWITCH, TOGGLE 3P2P (SRB SEP SLCT)
FAILURE MODE: FAILS OFF - SHORTS POLE TO POLE OR GND

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) C3A7 PANEL
- 2) SWITCH, TOGGLE 3P2P (SRB SEP SLCT)
- 3)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES	
	HDW/FUNC	ABORT
PRELAUNCH:	3/3	RTLS: 3/3
LIFTOFF:	1/1	TAL: 3/3
ONORBIT:	3/3	AOA: 3/3
DEORBIT:	3/3	ATO: 3/3
LANDING/SAFING:	3/3	

REDUNDANCY SCREENS: A [1] B [NA] C [F]

LOCATION: 35V73A3A7S1
PART NUMBER: ME452-0102-7301

CAUSES: CONTAMINATION, PIECE-PART STRUCTURAL FAILURE, VIBRATION,
MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD CAUSE LOSS OF MANUAL SRB SEP FUNCTION DURING A
GPC INHIBIT CONDITION. IF THE CREW COULD NOT FLY OUT OF THE
INHIBIT REGION, SRB SEP WILL NOT OCCUR LEADING TO LOSS OF
CREW/VEHICLE.

REFERENCES: 48BR10G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6658 ABORT: 3/3

ITEM: FUSE, 3A TO ET TUMBLE ARM
FAILURE MODE: FAILS OPEN

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) MAIN DC DIST ASSY #2
- 3) APCA-5
- 4) ALCA-2
- 5) FUSE, 3A TO ET TUMBLE ARM
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 55V76A122F
PART NUMBER: ME451-0010-1030

CAUSES: CONTAMINATION, THERMAL SHOCK, VIBRATION, MECH SHOCK

EFFECTS/RATIONALE:

THIS FAILURE WOULD ONLY CAUSE LOSS OF THE ET TUMBLING FUNCTION
AFTER SEP. NO EFFECT ON CREW/VEHICLE/MISSION

REFERENCES: 48BM19G

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6659 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE III TO ET TUMBLE CKT
FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY: .

- 1) MAIN DC BUS B
- 2) ALCA-2
- 3) HYBRID DRIVER TYPE III TO ET TUMBLE CKT
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 55V76A122AR
PART NUMBER: MC477-0263-0002

CAUSES: MECH SHOCK, VIBRATION, THERMAL SHOCK, PIECE-PART
STRUCTURAL FAILURE

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ET TUMBLE CIRCUIT. NO EFFECT
ON CREW/MISSION/VEHICLE.

REFERENCES: 48BM20F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/2R
MDAC ID: 6660 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE III TO ET TUMBLE CKT
FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) ALCA-2
- 3) HYBRID DRIVER TYPE III TO ET TUMBLE CKT
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/2R	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 55V76A122AR
PART NUMBER: MC477-0263-0002

CAUSES: MECH SHOCK, VIBRATION, THERMAL SHOCK, PIECE-PART
STRUCTURAL FAILURE

EFFECTS/RATIONALE:

FIRST FAILURE WOULD HAVE NO EFFECT. SECOND FAILURE "ON" WOULD
ENERGIZE THE ET TUMBLE VALVE PREMATURELY WHICH COULD CAUSE LOSS
OF MISSION DUE TO LOSS OF PROPELLANT.

REFERENCES: 48BM20F

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 6661 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE III TO ET TUMBLE CKT
FAILURE MODE: FAILS OFF

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) ALCA-2
- 3) HYBRID DRIVER TYPE III TO ET TUMBLE CKT
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: 55V76A122AR
PART NUMBER: MC477-0263-0002

CAUSES: MECH SHOCK, VIBRATION, THERMAL SHOCK, PIECE-PART
STRUCTURAL FAILURE

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ET TUMBLE CIRCUIT. NO EFFECT
ON CREW/MISSION/VEHICLE.

REFERENCES: 48BM20D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/2R
MDAC ID: 6662 ABORT: 3/3

ITEM: HYBRID DRIVER TYPE III TO ET TUMBLE CKT
FAILURE MODE: FAILS ON

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MAIN DC BUS B
- 2) ALCA-2
- 3) HYBRID DRIVER TYPE III TO ET TUMBLE CKT
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/2R	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 55V76A122AR
PART NUMBER: MC477-0263-0002

CAUSES: MECH SHOCK, VIBRATION, THERMAL SHOCK, PIECE-PART
STRUCTURAL FAILURE

EFFECTS/RATIONALE:

FIRST FAILURE WOULD HAVE NO EFFECT. SECOND FAILURE "ON" WOULD
ENERGIZE THE ET TUMBLE VALVE PREMATURELY WHICH COULD CAUSE LOSS
OF MISSION DUE TO LOSS OF PROPELLANT.

REFERENCES: 48BM20D

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6663 ABORT: 3/1R

ITEM: MASTER EVENTS CONTROLLER #1 - CRITICAL COMMANDS
FAILURE MODE: LOSS OF OUTPUT

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MASTER EVENTS CONTROLLER #1 - CRITICAL COMMANDS
- 2)
- 3)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/3	AOA:	3/1R
DEORBIT:	3/3	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [N] C [P]

LOCATION: 54V76A13
PART NUMBER: MC450-0016-0001

CAUSES: CONTAMINATION, THERMAL SHOCK, VIBRATION, MECH SHOCK,
PIECE-PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE OF FOUR COMMAND CIRCUITS
FOR MEC FUNCTIONS. LOSS OF ALL REDUNDANCY COULD CAUSE LOSS OF
CREW/VEHICLE DUE TO INABILITY OF MEC TO INITIATE STAGING AND SEP.

REFERENCES: 76DA19H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 2/1R
MDAC ID: 6664 ABORT: 2/1R

ITEM: MASTER EVENTS CONTROLLER #1 - CRITICAL COMMANDS
FAILURE MODE: INADVERTENT OUTPUT

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MASTER EVENTS CONTROLLER #1 - CRITICAL COMMANDS
- 2)
- 3)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	2/1R
LIFTOFF:	2/1R	TAL:	2/1R
ONORBIT:	3/3	AOA:	2/1R
DEORBIT:	3/3	ATO:	2/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [N] C [P]

LOCATION: 54V76A13
PART NUMBER: MC450-0016-0001

CAUSES: CONTAMINATION, THERMAL SHOCK, VIBRATION, MECH SHOCK,
PIECE-PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE DEGRADATION OF PROTECTION AGAINST
PREMATURE OPERATION OF CRITICAL FUNCTIONS. A SECOND FAILURE
COULD CAUSE A PREMATURE INITIATION OF A CRITICAL OR NON-CRITICAL
FUNCTION RESULTING IN LOSS OF CREW/MISSION/VEHICLE.

REFERENCES: 76DA19H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6665 ABORT: 3/1R

ITEM: MASTER EVENTS CONTROLLER #2 - CRITICAL COMMANDS
FAILURE MODE: LOSS OF OUTPUT

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MASTER EVENTS CONTROLLER #2 - CRITICAL COMMANDS
- 2)
- 3)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/3	AOA:	3/1R
DEORBIT:	3/3	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [N] C [P]

LOCATION: 55V76A14
PART NUMBER: MC450-0016-0001

CAUSES: CONTAMINATION, THERMAL SHOCK, VIBRATION, MECH SHOCK,
PIECE-PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE OF FOUR COMMAND CIRCUITS
FOR MEC FUNCTIONS. LOSS OF ALL REDUNDANCY COULD CAUSE LOSS OF
CREW/VEHICLE DUE TO INABILITY OF MEC TO INITIATE STAGING AND SEP.

REFERENCES: 76DA7H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 2/1R
MDAC ID: 6666 ABORT: 2/1R

ITEM: MASTER EVENTS CONTROLLER #2 - CRITICAL COMMANDS
FAILURE MODE: INADVERTENT OUTPUT

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MASTER EVENTS CONTROLLER #2 - CRITICAL COMMANDS
- 2)
- 3)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	2/1R
LIFTOFF:	2/1R	TAL:	2/1R
ONORBIT:	3/3	AOA:	2/1R
DEORBIT:	3/3	ATO:	2/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [N] C [P]

LOCATION: 55V76A14
PART NUMBER: MC450-0016-0001

CAUSES: CONTAMINATION, THERMAL SHOCK, VIBRATION, MECH SHOCK,
PIECE-PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE DEGRADATION OF PROTECTION AGAINST
PREMATURE OPERATION OF CRITICAL FUNCTIONS. A SECOND FAILURE
COULD CAUSE A PREMATURE INITIATION OF A CRITICAL OR NON-CRITICAL
FUNCTION RESULTING IN LOSS OF CREW/MISSION/VEHICLE.

REFERENCES: 76DA7H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6667 ABORT: 3/1R

ITEM: MASTER EVENTS CONTROLLER #1 - NON-CRITICAL
COMMANDS
FAILURE MODE: LOSS OF OUTPUT

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MASTER EVENTS CONTROLLER #1 - NON-CRITICAL COMMANDS
- 2)
- 3)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/3	AOA:	3/1R
DEORBIT:	3/3	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [N] C [P]

LOCATION: 54V76A13
PART NUMBER: MC450-0016-0001

CAUSES: CONTAMINATION, THERMAL SHOCK, VIBRATION, MECH SHOCK,
PIECE-PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE OF FOUR MONITOR CIRCUITS
FOR MEC FUNCTIONS. LOSS OF ALL REDUNDANCY COULD CAUSE LOSS OF
CREW/VEHICLE DUE TO LOSS OF POWER FOR CREW/VEHICLE SAFETY.

REFERENCES: 76DA19H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 2/1R
MDAC ID: 6668 ABORT: 2/1R

ITEM: MASTER EVENTS CONTROLLER #1 - NON-CRITICAL
COMMANDS
FAILURE MODE: INADVERTENT OUTPUT

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MASTER EVENTS CONTROLLER #1 - NON-CRITICAL COMMANDS
- 2)
- 3)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	2/1R
LIFTOFF:	2/1R	TAL:	2/1R
ONORBIT:	3/3	AOA:	2/1R
DEORBIT:	3/3	ATO:	2/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [N] C [P]

LOCATION: 54V76A13
PART NUMBER: MC450-0016-0001

CAUSES: CONTAMINATION, THERMAL SHOCK, VIBRATION, MECH SHOCK,
PIECE-PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE DEGRADATION OF PROTECTION AGAINST
PREMATURE OPERATION OF CRITICAL FUNCTIONS. A SECOND FAILURE
COULD CAUSE A PREMATURE INITIATION OF A CRITICAL OR NON-CRITICAL
FUNCTION RESULTING IN LOSS OF CREW/MISSION/VEHICLE.

REFERENCES: 76DA19H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 6669 ABORT: 3/1R

ITEM: MASTER EVENTS CONTROLLER #2 - NON-CRITICAL
COMMANDS
FAILURE MODE: LOSS OF OUTPUT

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MASTER EVENTS CONTROLLER #2 - NON-CRITICAL COMMANDS
- 2)
- 3)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/3	AOA:	3/1R
DEORBIT:	3/3	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [N] C [P]

LOCATION: 55V76A14
PART NUMBER: MC450-0016-0001

CAUSES: CONTAMINATION, THERMAL SHOCK, VIBRATION, MECH SHOCK,
PIECE-PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE LOSS OF ONE OF FOUR MONITOR CIRCUITS
FOR MEC FUNCTIONS. LOSS OF ALL REDUNDANCY COULD CAUSE LOSS OF
CREW/VEHICLE DUE TO LOSS OF POWER FOR CREW/VEHICLE SAFETY.

REFERENCES: 76DA7H

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 3/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 2/1R
MDAC ID: 6670 ABORT: 2/1R

ITEM: MASTER EVENTS CONTROLLER #2 - NON-CRITICAL
COMMANDS
FAILURE MODE: INADVERTENT OUTPUT

LEAD ANALYST: K. SCHMECKPEPER SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) MASTER EVENTS CONTROLLER #2 - NON-CRITICAL COMMANDS
- 2)
- 3)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	2/1R
LIFTOFF:	2/1R	TAL:	2/1R
ONORBIT:	3/3	AOA:	2/1R
DEORBIT:	3/3	ATO:	2/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [N] C [P]

LOCATION: 55V76A14
PART NUMBER: MC450-0016-0001

CAUSES: CONTAMINATION, THERMAL SHOCK, VIBRATION, MECH SHOCK,
PIECE-PART STRUCTURAL FAILURE

EFFECTS/RATIONALE:

FIRST FAILURE WOULD CAUSE DEGRADATION OF PROTECTION AGAINST
PREMATURE OPERATION OF CRITICAL FUNCTIONS. A SECOND FAILURE
COULD CAUSE A PREMATURE INITIATION OF A CRITICAL OR NON-CRITICAL
FUNCTION RESULTING IN LOSS OF CREW/MISSION/VEHICLE.

REFERENCES: 76DA7H

APPENDIX D
POTENTIAL CRITICAL ITEMS

MDAC-ID -----	ITEM -----	FAILURE MODE -----
5007	FUSE, 200A TO MAIN DC DIST ASSY 1	FAILS OPEN
5008	FUSE, 200A TO MAIN DC DIST ASSY 1	FAILS OPEN
5017	FUSE, 200A TO APCA-4	FAILS OPEN
5018	FUSE, 200A TO APCA-4	FAILS OPEN
5020	SWITCH, MOTORIZED (DC TIE BUS MAIN A)	FAILS OPEN
5022	FUSE, 150A TO DC TIE BUS	FAILS OPEN
5023	FUSE, 150A TO DC TIE BUS	FAILS OPEN
5024	FUSE, 150A TO DC TIE BUS	FAILS OPEN
5025	SWITCH, MOTORIZED (MAIN DC BUS A F/C PWR)	FAILS OPEN
5028	FUSE, 20A TO ESS BUS 1BC	FAILS OPEN
5030	SHUNT, DC AMMETER (TO F/C 1)	FAILS OPEN
5047	SWITCH, TOGGLE SPDT (MAIN BUS TIE A)	FAILS TO TRANSFER
5048	SWITCH, TOGGLE SPDT (MAIN BUS TIE A)	INADVERTENT TRANSFER
5053	DIODE, ISOLATION 12A	FAILS OPEN
5056	DIODE, ISOLATION 12A	FAILS OPEN
5059	FUSE, 35A	FAILS OPEN
5060	FUSE, 35A	FAILS OPEN
5061	FUSE, 35A	FAILS OPEN
5062	FUSE, 35A	FAILS OPEN
5064	FUSE, 5A TO RESISTORS TO MN A CONT BUS PWR, ESS BUS SOURCE 3AB, ESS BUS SOURCE 2CA	FAILS OPEN
5065	FUSE, 5A TO RMS PWR (FUSE 1), RMS HTRS (RESISTORS) & RJDA MANF DRS (FUSES 9 & 12)	FAILS OPEN
5066	DIODE, ISOLATION 12A (TO CONT BUS BC1)	FAILS OPEN
5068	DIODE, ISOLATION 12A (TO CONT BUS BC2)	FAILS OPEN
5070	DIODE, ISOLATION 12A (TO CONT BUS BC3)	FAILS OPEN
5082	RESISTOR, 1.2K 2W (TO MPCA-1)	FAILS OPEN
5084	SWITCH, TOGGLE SPST (MCA LOGIC MN A MID 1)	FAILS OPEN
5085	FUSE, 150A TO FPCA-1	FAILS OPEN
5086	FUSE, 150A TO FPCA-1	FAILS OPEN
5087	FUSE, 150A TO FPCA-1	FAILS OPEN
5090	RPC, 5A (FMCA-1 PWR CONT)	FAILS OFF
5091	FUSE, 150A TO MAIN DC DIST ASSY 1	FAILS OPEN

APPENDIX D (CONT'D)

POTENTIAL CRITICAL ITEMS (CONT'D)

MDAC-ID -----	ITEM -----	FAILURE MODE -----
5092	FUSE, 150A TO MAIN DC DIST ASSY 1	FAILS OPEN
5093	FUSE, 150A TO MAIN DC DIST ASSY 1	FAILS OPEN
5096	FUSE, 35A TO FLCA-1	FAILS OPEN
5097	RESISTOR, 1.2K 2W (TO FPCA-1)	FAILS OPEN
5098	SWITCH, TOGGLE SPST (MCA LOGIC MN A FWD 1)	FAILS OPEN
5103	RPC, 5A (TO MMCA-1)	FAILS OPEN
5104	FUSE, 35A TO H2/O2 HTR CONT ASSY #1	FAILS OFF
5105	FUSE, 50A TO H2/O2 HTR CONT ASSY #3	FAILS OPEN
5106	FUSE, 150A TO APCA-1	FAILS OPEN
5107	FUSE, 100A TO ALCA-1	FAILS OPEN
5109	RESISTOR, 1.2K 2W (TO APCA-4)	FAILS OPEN
5110	SWITCH, TOGGLE SPST (MCA LOGIC MN A AFT 1)	FAILS OPEN
5112	RPC, 5A (TO AMCA-1)	FAILS OPEN
5114	RESISTOR, 1.2K 2W (TO MPCA-1)	FAILS OPEN
5115	SWITCH, TOGGLE SPST (MCA LOGIC MN A MID 3)	FAILS OPEN
5118	RPC, 5A (TO MMCA-3)	FAILS OFF
5125	FUSE, 200A TO MAIN DC DIST ASSY 2	FAILS OPEN
5126	FUSE, 200A TO MAIN DC DIST ASSY 2	FAILS OPEN
5136	SHUNT, DC AMMETER (TO F/C 2)	FAILS OPEN
5139	FUSE, 20A TO ESS BUS 2CA	FAILS OPEN
5140	FUSE, 200A TO DC TIE BUS	FAILS OPEN
5141	FUSE, 200A TO DC TIE BUS	FAILS OPEN
5142	FUSE, 150A TO DC TIE BUS	FAILS OPEN
5143	FUSE, 150A TO DC TIE BUS	FAILS OPEN
5144	FUSE, 150A TO DC TIE BUS	FAILS OPEN
5146	FUSE, 200A TO APCA-5	FAILS OPEN
5147	FUSE, 200A TO APCA-5	FAILS OPEN
5148	SWITCH, MOTORIZED (DC TIE BUS MAIN B)	FAILS OPEN
5151	SWITCH, MOTORIZED (MAIN DC BUS B F/C PWR)	FAILS OPEN
5152	SWITCH, MOTORIZED (MAIN DC BUS C F/C PWR)	FAILS OPEN
5155	SWITCH, MOTORIZED (DC TIE BUS MAIN C)	FAILS OPEN
5176	DIODE, ISOLATION 12A	FAILS OPEN
5178	DIODE, ISOLATION 12A	FAILS OPEN
5180	SWITCH, TOGGLE SPDT (MAIN BUS TIE B)	FAILS TO TRANSFER

APPENDIX D (CONT'D)

POTENTIAL CRITICAL ITEMS (CONT'D)

MDAC-ID -----	ITEM -----	FAILURE MODE -----
5181	SWITCH, TOGGLE SPDT (MAIN BUS TIE B)	INADVERTENT TRANSFER
5188	FUSE, 80A	FAILS OPEN
5190	FUSE, 35A	FAILS OPEN
5191	FUSE, 35A	FAILS OPEN
5192	FUSE, 10A TO RMS PWR & RJDA	FAILS OPEN
5193	FUSE, 5A TO RESISTORS TO CONT BUS PWR MN B, ESS BUSSES 1BC & 3AB	FAILS OPEN
5195	FUSE, 35A	FAILS OPEN
5196	FUSE, 35A	FAILS OPEN
5205	RESISTOR, 1.2K 2W (TO FPCA-2)	FAILS OPEN
5206	SWITCH, TOGGLE SPST (MCA LOGIC MN B FWD 2)	FAILS OPEN
5208	FUSE, 150A TO FPCA-2	FAILS OPEN
5209	FUSE, 150A TO FPCA-2	FAILS OPEN
5210	FUSE, 150A TO FPCA-2	FAILS OPEN
5213	RPC, 5A (FMCA-2 PWR CONT)	FAILS OFF
5214	FUSE, 150A TO MAIN DC DIST ASSY 2	FAILS OPEN
5215	FUSE, 150A TO MAIN DC DIST ASSY 2	FAILS OPEN
5216	FUSE, 150A TO MAIN DC DIST ASSY 2	FAILS OPEN
5217	FUSE, 35A TO FLCA-2	FAILS OPEN
5220	RESISTOR, 1.2K 2W (TO MPCA-2)	FAILS OPEN
5221	SWITCH, TOGGLE SPST (MCA LOGIC MN B MID 1)	FAILS OPEN
5223	RESISTOR, 1.2K 2W (TO MPCA-2)	FAILS OPEN
5224	SWITCH, TOGGLE SPST (MCA LOGIC MN B MID 2)	FAILS OPEN
5226	RESISTOR, 1.2K 2W (TO MPCA-2)	FAILS OPEN
5228	SWITCH, TOGGLE SPST (MCA LOGIC MN B MID 3)	FAILS OPEN
5229	RESISTOR, 1.2K 2W (TO MPCA-2)	FAILS OPEN
5231	SWITCH, TOGGLE SPST (MCA LOGIC MN B MID 4)	FAILS OPEN
5235	RPC, 5A (TO MMCA-1)	FAILS OFF
5237	RPC, 5A (TO MMCA-2)	FAILS OFF
5238	RPC, 5A (TO MMCA-3)	FAILS OFF
5241	RPC, 5A (TO MMCA-4)	FAILS OFF
5242	FUSE, 35A TO H2/O2 HTR CONT ASSY #2	FAILS OPEN
5243	FUSE, 50A TO H2/O2 HTR CONT ASSY #3	FAILS OPEN
5244	FUSE, 50A TO H2/O2 HTR CONT ASSY #4	FAILS OPEN
5245	FUSE, 150A TO APCA-2	FAILS OPEN
5246	FUSE, 100A TO ALCA-2	FAILS OPEN

APPENDIX D (CONT'D)

POTENTIAL CRITICAL ITEMS (CONT'D)

MDAC-ID	ITEM	\$	FAILURE MODE
-----	----		-----
5248	RESISTOR, 1.2K 2W (TO APCA-5)		FAILS OPEN
5249	SWITCH, TOGGLE SPST (MCA LOGIC MN B AFT 2)		FAILS OPEN
5251	RPC, 5A (TO AMCA-2)		FAILS OPEN
5253	RESISTOR, 1.2K 2W (TO P/L AUX BUS - MPCA-1)		FAILS OPEN
5254	RESISTOR, 1.2K 2W (TO P/L AUX BUS - MPCA-2)		FAILS OPEN
5255	RESISTOR, 1.2K 2W (TO P/L CABIN BUS - MPCA-2)		FAILS OPEN
5256	RESISTOR, 1.2K 2W (TO P/L CABIN BUS - MPCA-1)		FAILS OPEN
5274	DIODE, ISOLATION 35A (TO PAYLOAD CABIN)		FAILS OPEN
5275	DIODE, ISOLATION 35A (TO PAYLOAD CABIN)		SHORTS
5276	DIODE, ISOLATION 35A (TO PAYLOAD CABIN)		SHORTS
5277	DIODE, ISOLATION 35A (TO PAYLOAD CABIN)		FAILS OPEN
5278	DIODE, ISOLATION 35A (TO PAYLOAD CABIN)		FAILS OPEN
5279	DIODE, ISOLATION 35A (TO PAYLOAD CABIN)		SHORTS
5280	DIODE, ISOLATION 35A (TO PAYLOAD CABIN)		SHORTS
5281	DIODE, ISOLATION 35A (TO PAYLOAD CABIN)		FAILS OPEN
5282	DIODE, ISOLATION 35A (TO PAYLOAD CABIN)		FAILS OPEN
5283	DIODE, ISOLATION 35A (TO PAYLOAD CABIN)		SHORTS
5284	DIODE, ISOLATION 35A (TO PAYLOAD CABIN)		SHORTS
5285	DIODE, ISOLATION 35A (TO PAYLOAD CABIN)		FAILS OPEN
5302	DIODE, ISOLATION 35A (TO P/L PWR KILL - FC#3)		FAILS OPEN
5316	FUSE, 150A TO MAIN DC DIST ASSY 3 (PAYLOAD)		FAILS OPEN
5317	FUSE, 150A TO MAIN DC DIST ASSY 3 (PAYLOAD)		FAILS OPEN
5320	FUSE, 150A TO PAYLOAD		FAILS OPEN
5321	FUSE, 150A TO PAYLOAD		FAILS OPEN
5322	FUSE, 200A TO PAYLOAD		FAILS OPEN
5323	FUSE, 200A TO PAYLOAD		FAILS OPEN
5324	FUSE, 200A TO PAYLOAD		FAILS OPEN
5325	FUSE, 200A TO PAYLOAD		FAILS OPEN

APPENDIX D (CONT'D)

POTENTIAL CRITICAL ITEMS (CONT'D)

MDAC-ID	ITEM	FAILURE MODE
-----	----	-----
5330	DIODE, ISOLATION 35A (TO DC RETURN FROM P/L BAY)	FAILS OPEN
5333	DIODE, ISOLATION 35A (TO DC RETURN FROM P/L BAY)	FAILS OPEN
5336	SWITCH, MOTORIZED (F/C 3 STRUCTURE RETURN)	FAILS TO TRANSFER
5337	SWITCH, MOTORIZED (F/C 3 STRUCTURE RETURN)	INADVERTENT TRANSFER
5346	FUSE, 200A TO MAIN DC DIST ASSY 3	FAILS OPEN
5347	FUSE, 200A TO MAIN DC DIST ASSY 3	FAILS OPEN
5357	SHUNT, DC AMMETER (TO F/C 3)	FAILS OPEN
5358	FUSE, 200A TO APCA-6	FAILS OPEN
5359	FUSE, 200A TO APCA-6	FAILS OPEN
5361	FUSE, 200A TO DC TIE BUS	FAILS OPEN
5362	FUSE, 200A TO DC TIE BUS	FAILS OPEN
5364	FUSE, 20A TO ESS BUS 3AB	FAILS OPEN
5369	SWITCH, TOGGLE SPDT (MAIN BUS TIE C)	FAILS TO TRANSFER
5370	SWITCH, TOGGLE SPDT (MAIN BUS TIE C)	INADVERTENT TRANSFER
5377	FUSE, 80A TO AFT P/L MN C	FAILS OPEN
5395	FUSE, 35A	FAILS OPEN
5396	FUSE, 35A	FAILS OPEN
5399	FUSE, 5A TO RESISTORS TO CONT BUS MAIN C, ESS BUSES 1BC & 2CA	FAILS OPEN
5400	FUSE, 35A	FAILS OPEN
5401	FUSE, 35A	FAILS OPEN
5402	FUSE, 35A	FAILS OPEN
5407	DIODE, ISOLATION 12A (TO CONT BUS AB1)	FAILS OPEN
5410	DIODE, ISOLATION 12A (TO CONT BUS AB2)	FAILS OPEN
5411	DIODE, ISOLATION 12A (TO CONT BUS AB3)	FAILS OPEN
5419	RESISTOR, 1.2K 2W (TO FPCA-3)	FAILS OPEN
5421	SWITCH, TOGGLE SPST (MCA LOGIC MN C FWD 3)	FAILS OPEN
5422	FUSE, 150A TO FPCA-3	FAILS OPEN
5423	FUSE, 150A TO FPCA-3	FAILS OPEN
5426	RPC, 5A (FMCA-3 PWR CONT)	FAILS OFF
5427	FUSE, 35A TO FLCA-3	FAILS OPEN
5430	RESISTOR, 1.2K 2W (TO MPCA-3)	FAILS OPEN
5431	RESISTOR, 1.2K 2W (TO MPCA-3)	FAILS OPEN
5432	SWITCH, TOGGLE SPST (MCA LOGIC MN C MID 2)	FAILS OPEN

APPENDIX D (CONT'D)

POTENTIAL CRITICAL ITEMS (CONT'D)

MDAC-ID -----	ITEM ----	FAILURE MODE -----
5434	SWITCH, TOGGLE SPST (MCA LOGIC MN C MID 4)	FAILS OPEN
5438	FUSE, 35A TO H2/O2 HTR CONT ASSY #1	FAILS OPEN
5439	FUSE, 35A TO H2/O2 HTR CONT ASSY #2	FAILS OPEN
5440	FUSE, 50A TO H2/O2 HTR CONT ASSY #4	FAILS OPEN
5442	RPC, 5A (TO MMCA-2)	FAILS OFF
5444	RPC, 5A (TO MMCA-4)	FAILS OFF
5445	FUSE, 150A TO APCA-3	FAILS OPEN
5446	FUSE, 100A TO ALCA-3	FAILS OPEN
5448	RESISTOR, 1.2K 2W (TO APCA-6)	FAILS OPEN
5449	SWITCH, TOGGLE SPST (MCA LOGIC MN C AFT 3)	FAILS OPEN
5451	RPC, 5A (TO AMCA-3)	FAILS OPEN
5453	RESISTOR, 1.2K 2W (TO ESS BUS 1BC)	FAILS OPEN
5455	SWITCH, TOGGLE 3PDT (ESS BUS SOURCE MAIN B/C)	FAILS OPEN
5456	RESISTOR, 1.2K 2W (TO ESS BUS 1BC)	FAILS OPEN
5477	DIODE, ISOLATION 35A (ESS BUS 1BC)	FAILS OPEN
5480	DIODE, ISOLATION 35A (ESS BUS 1BC)	FAILS OPEN
5481	DIODE, ISOLATION 35A (ESS BUS 1BC)	FAILS OPEN
5484	DIODE, ISOLATION 35A (TO R1A1 PANEL - ESS BUS 1BC)	FAILS OPEN
5486	FUSE, 10A TO ESS BUS 1BC	FAILS OPEN
5487	FUSE, 10A TO ESS BUS 1BC	FAILS OPEN
5489	FUSE, 15A TO APCA-4	FAILS OPEN
5492	FUSE, 15A TO MPCA-1	FAILS OPEN
5494	FUSE, 10A TO FPCA-1 & FLCA1	FAILS OPEN
5495	FUSE, 10A TO R15 PANEL	FAILS OPEN
5501	FUSE, 7.5A TO ALCA-1 (MPS)	FAILS OPEN
5509	RESISTOR, 1.2K 2W (TO APCA-5)	FAILS OPEN
5510	SWITCH, TOGGLE SPST (AFT POD VLV LOGIC GRP 1/2)	FAILS OPEN
5512	RPC, 5A (TO RCS/OMS BC BUS)	FAILS OPEN
5514	DIODE, 12A (TO RCS/OMS BC BUS)	FAILS OPEN
5515	DIODE, 12A (TO RCS/OMS BC BUS)	SHORTS
5516	DIODE, 12A (TO RCS/OMS BC BUS)	SHORTS
5517	DIODE, 12A (TO RCS/OMS BC BUS)	FAILS OPEN
5518	SWITCH, TOGGLE 3PDT (ESS BUS SOURCE MAIN C/A)	FAILS OPEN
5520	RESISTOR, 1.2K 2W (TO ESS BUS 2CA)	FAILS OPEN

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APPENDIX D (CONT'D)

POTENTIAL CRITICAL ITEMS (CONT'D)

MDAC-ID -----	ITEM -----	FAILURE MODE -----
5521	RESISTOR, 1.2K 2W (TO ESS BUS 2CA)	FAILS OPEN
5542	DIODE, ISOLATION 35A (TO R1A1 PANEL - ESS BUS 2CA)	FAILS OPEN
5545	DIODE, ISOLATION 35A (ESS BUS 2CA)	FAILS OPEN
5546	DIODE, ISOLATION 35A (ESS BUS 2CA)	FAILS OPEN
5549	DIODE, ISOLATION 35A (ESS BUS 2CA)	FAILS OPEN
5550	FUSE, 10A TO ESS BUS 2CA	FAILS OPEN
5551	FUSE, 10A TO ESS BUS 2CA	FAILS OPEN
5554	FUSE, 15A TO APCA-5	FAILS OPEN
5557	FUSE, 15A TO MPCA-2	FAILS OPEN
5558	FUSE, 10A TO FPCA-2 & FLCA-2	FAILS OPEN
5559	FUSE, 10A TO 013 & R15 PANELS	FAILS OPEN
5572	FUSE, 7.5A TO ALCA-2 (MPS)	FAILS OPEN
5573	RESISTOR, 1.2K 2W (TO APCA-6)	FAILS OPEN
5574	SWITCH, TOGGLE SPST (AFT POD VLV LOGIC GRP 2/3)	FAILS OPEN
5576	RPC, 5A (TO RCS/OMS CA BUS)	FAILS OPEN
5578	DIODE, 12A (TO RCS/OMS CA BUS)	FAILS OPEN
5579	DIODE, 12A (TO RCS/OMS CA BUS)	SHORTS
5580	DIODE, 12A (TO RCS/OMS CA BUS)	SHORTS
5581	DIODE, 12A (TO RCS/OMS CA BUS)	FAILS OPEN
5582	DIODE, 12A (TO RCS/OMS AB BUS)	FAILS OPEN
5583	DIODE, 12A (TO RCS/OMS AB BUS)	SHORTS
5584	DIODE, 12A (TO RCS/OMS AB BUS)	SHORTS
5585	DIODE, 12A (TO RCS/OMS AB BUS)	FAILS OPEN
5586	RPC, 5A (TO RCS/OMS AB BUS)	FAILS OPEN
5588	SWITCH, TOGGLE SPST (AFT POD VLV LOGIC GRP 1/3)	FAILS OPEN
5590	RESISTOR, 1.2K 2W (TO APCA-4)	FAILS OPEN
5593	DIODE, ISOLATION 35A (ESS BUS 3AB)	FAILS OPEN
5596	DIODE, ISOLATION 35A (ESS BUS 3AB)	FAILS OPEN
5597	DIODE, ISOLATION 35A (ESS BUS 3AB)	FAILS OPEN
5600	DIODE, ISOLATION 35A (TO R1A1 PANEL - ESS BUS 3AB)	FAILS OPEN
5601	FUSE, 10A TO ESS BUS 3AB	FAILS OPEN
5602	FUSE, 10A TO ESS BUS 3AB	FAILS OPEN
5603	FUSE, 7.5A	FAILS OPEN
5605	FUSE, 15A TO APCA-6	FAILS OPEN
5608	FUSE, 15A TO MPCA-3	FAILS OPEN
5609	FUSE, 10A TO FPCA-3 & FLCA-3	FAILS OPEN
5610	FUSE, 10A TO 013 PANEL	FAILS OPEN
5611	FUSE, 7.5A	FAILS OPEN

APPENDIX D (CONT'D)

POTENTIAL CRITICAL ITEMS (CONT'D)

MDAC-ID -----	ITEM -----	FAILURE MODE -----
5621	FUSE, 7.5A TO ALCA-3 (MPS)	FAILS OPEN
5626	RESISTOR, 1.2K 2W (TO ESS BUS 3AB)	FAILS OPEN
5627	RESISTOR, 1.2K 2W (TO ESS BUS 3AB)	FAILS OPEN
5628	SWITCH, TOGGLE 3PDT (ESS BUS SOURCE MAIN A/B)	FAILS OPEN
5683	RESISTOR, 1.2K 2W (TO CONT BUSSES AB & CA RESET)	FAILS OPEN
5684	RESISTOR, 1.2K 2W (TO CONT BUSSES AB & BC RESET)	FAILS OPEN
5685	RESISTOR, 1.2K 2W (TO CONT BUSSES CA & BC RESET)	FAILS OPEN
5693	DIODE, ISOLATION 12A (TO CONT BUS AB1)	FAILS OPEN
5694	DIODE, ISOLATION 12A (TO CONT BUS AB1)	SHORTS
5695	DIODE, ISOLATION 12A (TO CONT BUS CA1)	SHORTS
5696	DIODE, ISOLATION 12A (TO CONT BUS CA1)	FAILS OPEN
5697	DIODE, ISOLATION 12A (TO CONT BUS AB2)	FAILS OPEN
5698	DIODE, ISOLATION 12A (TO CONT BUS AB2)	SHORTS
5699	DIODE, ISOLATION 12A (TO CONT BUS CA2)	SHORTS
5700	DIODE, ISOLATION 12A (TO CONT BUS CA2)	FAILS OPEN
5701	DIODE, ISOLATION 12A (TO CONT BUS AB3)	FAILS OPEN
5702	DIODE, ISOLATION 12A (TO CONT BUS AB3)	SHORTS
5703	DIODE, ISOLATION 12A (TO CONT BUS CA3)	SHORTS
5704	DIODE, ISOLATION 12A (TO CONT BUS CA3)	FAILS OPEN
5715	HYBRID DRIVER TYPE I (CONT BUS CA1 & AB1)	FAILS OFF
5717	HYBRID DRIVER TYPE I (CONT BUS CA2 & AB2)	FAILS OFF
5719	HYBRID DRIVER TYPE I (CONT BUS CA3 & AB3)	FAILS OFF
5721	HYBRID DRIVER TYPE I (CONT BUS BC1 & AB1)	FAILS OFF
5723	HYBRID DRIVER TYPE I (CONT BUS BC2 & AB2)	FAILS OFF
5725	HYBRID DRIVER TYPE I (CONT BUS BC3 & AB3)	FAILS OFF

APPENDIX D (CONT'D)

POTENTIAL CRITICAL ITEMS (CONT'D)

MDAC-ID -----	ITEM -----	FAILURE MODE -----
5727	HYBRID DRIVER TYPE I (CONT BUS BC1 & CA1)	FAILS OFF
5729	HYBRID DRIVER TYPE I (CONT BUS BC2 & CA2)	FAILS OFF
5731	HYBRID DRIVER TYPE I (CONT BUS BC3 & CA3)	FAILS OFF
5739	DIODE, ISOLATION 12A (TO CONT BUS AB1)	FAILS OPEN
5740	DIODE, ISOLATION 12A (TO CONT BUS AB1)	SHORTS
5741	DIODE, ISOLATION 12A (TO CONT BUS BC1)	SHORTS
5742	DIODE, ISOLATION 12A (TO CONT BUS BC1)	FAILS OPEN
5743	DIODE, ISOLATION 12A (TO CONT BUS BC2)	FAILS OPEN
5744	DIODE, ISOLATION 12A (TO CONT BUS BC2)	SHORTS
5745	DIODE, ISOLATION 12A (TO CONT BUS AB2)	SHORTS
5746	DIODE, ISOLATION 12A (TO CONT BUS AB2)	FAILS OPEN
5747	DIODE, ISOLATION 12A (TO CONT BUS BC3)	FAILS OPEN
5748	DIODE, ISOLATION 12A (TO CONT BUS BC3)	SHORTS
5749	DIODE, ISOLATION 12A (TO CONT BUS AB3)	SHORTS
5750	DIODE, ISOLATION 12A (TO CONT BUS AB3)	FAILS OPEN
5769	DIODE, ISOLATION 12A (TO CONT BUS CA1)	FAILS OPEN
5770	DIODE, ISOLATION 12A (TO CONT BUS CA1)	SHORTS
5771	DIODE, ISOLATION 12A (TO CONT BUS BC1)	SHORTS
5772	DIODE, ISOLATION 12A (TO CONT BUS BC1)	FAILS OPEN
5773	DIODE, ISOLATION 12A (TO CONT BUS CA2)	FAILS OPEN
5774	DIODE, ISOLATION 12A (TO CONT BUS CA2)	SHORTS
5775	DIODE, ISOLATION 12A (TO CONT BUS BC2)	SHORTS
5776	DIODE, ISOLATION 12A (TO CONT BUS BC2)	FAILS OPEN
5777	DIODE, ISOLATION 12A (TO CONT BUS CA3)	FAILS OPEN

APPENDIX D (CONT'D)

POTENTIAL CRITICAL ITEMS (CONT'D)

MDAC-ID -----	ITEM ----	FAILURE MODE -----
5778	DIODE, ISOLATION 12A (TO CONT BUS CA3)	SHORTS
5779	DIODE, ISOLATION 12A (TO CONT BUS BC3)	SHORTS
5780	DIODE, ISOLATION 12A (TO CONT BUS BC3)	FAILS OPEN
5788	FUSE, 1A TO P/L RETENTION LATCHES SYS 1	FAILS OPEN
5789	FUSE, 1A TO P/L RETENTION LATCHES SYS 2	FAILS OPEN
5790	FUSE, 5A TO CONT BUS AB1	FAILS OPEN
5791	FUSE, 5A TO CONT BUS AB2	FAILS OPEN
5792	FUSE, 5A TO CONT BUS AB3	FAILS OPEN
5793	FUSE, 5A TO CONT BUS BC1	FAILS OPEN
5794	FUSE, 5A TO CONT BUS BC2	FAILS OPEN
5795	FUSE, 5A TO CONT BUS BC3	FAILS OPEN
5796	FUSE, 5A TO CONT BUS CA1	FAILS OPEN
5797	FUSE, 5A TO CONT BUS CA2	FAILS OPEN
5798	FUSE, 5A TO CONT BUS CA3	FAILS OPEN
5799	FUSE, 1A TO MMCA-1 & 2	FAILS OPEN
5800	FUSE, 1A TO MMCA-1 & 2	FAILS OPEN
5801	FUSE, 1A TO MMCA-2	FAILS OPEN
5802	FUSE, 1A TO MMCA-2	FAILS OPEN
5803	FUSE, 1A TO MMCA-2 & 1	FAILS OPEN
5804	FUSE, 1A TO MMCA-2 & 1	FAILS OPEN
5805	FUSE, 1A TO MMCA-4 & 3	FAILS OPEN
5806	FUSE, 1A TO MMCA-4 & 3	FAILS OPEN
5807	FUSE, 1A TO MMCA-4 & 3	FAILS OPEN
5808	FUSE, 1A TO MMCA-4 & 3	FAILS OPEN
5809	FUSE, 1A TO MMCA-4 & 3	FAILS OPEN
5810	FUSE, 1A TO MMCA-4 & 3	FAILS OPEN
5811	DIODE, ISOLATION 3A	FAILS OPEN
5812	DIODE, ISOLATION 3A	SHORTS
5813	DIODE, ISOLATION 3A	SHORTS
5814	DIODE, ISOLATION 3A	FAILS OPEN
5815	DIODE, ISOLATION 3A	FAILS OPEN
5816	DIODE, ISOLATION 3A	SHORTS
5817	DIODE, ISOLATION 3A	SHORTS
5818	DIODE, ISOLATION 3A	FAILS OPEN
5819	DIODE, ISOLATION 3A	FAILS OPEN
5820	DIODE, ISOLATION 3A	SHORTS
5821	DIODE, ISOLATION 3A	SHORTS
5822	DIODE, ISOLATION 3A	FAILS OPEN
5823	DIODE, ISOLATION 3A	FAILS OPEN
5824	DIODE, ISOLATION 3A	SHORTS
5825	DIODE, ISOLATION 3A	SHORTS
5826	DIODE, ISOLATION 3A	FAILS OPEN
5827	SWITCH, TOGGLE 4PDT (P/L BAY MECH PWR SYS 1)	FAILS OPEN OR SHORTS TO CASE

APPENDIX D (CONT'D)

POTENTIAL CRITICAL ITEMS (CONT'D)

MDAC-ID	ITEM	FAILURE MODE
-----	----	-----
5830	SWITCH, TOGGLE 4PDT (P/L BAY MECH PWR SYS 2)	FAILS OPEN OR SHORTS TO CASE
5867	FUSE, 80A TO INV 1 A	FAILS OPEN
5868	FUSE, 80A TO INV 1 B	FAILS OPEN
5869	FUSE, 80A TO INV 1 C	FAILS OPEN
5913	DIODE, BLOCKING 1A (TO 1 A RESET)	SHORTS
5916	DIODE, BLOCKING 1A (TO 1 B RESET)	SHORTS
5917	DIODE, BLOCKING 1A (TO 1 C RESET)	SHORTS
5941	FUSE, 3A TO AC BUS 1 A	FAILS OPEN
5942	FUSE, 3A TO AC BUS 1 B	FAILS OPEN
5943	FUSE, 3A TO AC BUS 1 C	FAILS OPEN
5966	CIRCUIT BREAKER TO FMCA-1	FAILS OPEN
5968	CIRCUIT BREAKER TO MMCA-1	FAILS OPEN
5970	CIRCUIT BREAKER TO MMCA-3	FAILS OPEN
5972	CIRCUIT BREAKER TO AMCA-1	FAILS OPEN
5980	RELAY TO PLBD AC1	FAILS OPEN
5982	RELAY TO PLBD AC1	FAILS OPEN
5984	RELAY TO PLBD AC1	FAILS OPEN
5986	RELAY TO PLBD AC1	FAILS OPEN
5988	RELAY, 4P TO PLBM-AC1	FAILS OPEN
5989	RELAY, 4P TO PLBM-AC1	FAILS CLOSED
5990	RELAY, 4P TO PLBM-AC1	FAILS OPEN
5991	RELAY, 4P TO PLBM-AC1	FAILS CLOSED
5992	RELAY, 4P TO PLBM-AC1	FAILS OPEN
5993	RELAY, 4P TO PLBM-AC1	FAILS CLOSED
5994	RELAY, 4P TO PLBM-AC1	FAILS OPEN
5995	RELAY, 4P TO PLBM-AC1	FAILS CLOSED
6032	FUSE, 80A TO INV 2 A	FAILS OPEN
6033	FUSE, 80A TO INV 2 B	FAILS OPEN
6034	FUSE, 80A TO INV 2 C	FAILS OPEN
6092	DIODE, BLOCKING 1A (TO 2 A RESET)	SHORTS
6095	DIODE, BLOCKING 1A (TO 2 B RESET)	SHORTS
6096	DIODE, BLOCKING 1A (TO 2 C RESET)	SHORTS
6104	FUSE, 3A TO AC BUS 2 A	FAILS OPEN
6105	FUSE, 3A TO AC BUS 2 B	FAILS OPEN
6106	FUSE, 3A TO AC BUS 2 C	FAILS OPEN
6144	CIRCUIT BREAKER TO FMCA-2	FAILS OPEN
6147	CIRCUIT BREAKER TO MMCA-1	FAILS OPEN
6148	CIRCUIT BREAKER TO MMCA-2	FAILS OPEN
6151	CIRCUIT BREAKER TO MMCA-3	FAILS OPEN
6152	CIRCUIT BREAKER TO MMCA-4	FAILS OPEN
6155	CIRCUIT BREAKER TO AMCA-2	FAILS OPEN
6156	RELAY, 4P TO PLBM-AC2	FAILS OPEN

APPENDIX D (CONT'D)

POTENTIAL CRITICAL ITEMS (CONT'D)

MDAC-ID	ITEM	FAILURE MODE
-----	----	-----
6157	RELAY, 4P TO PLBM-AC2	FAILS CLOSED
6158	RELAY, 4P TO PLBM-AC2	FAILS CLOSED
6159	RELAY, 4P TO PLBM-AC2	FAILS OPEN
6160	RELAY TO PLBD AC2	FAILS OPEN
6163	RELAY TO PLBD AC2	FAILS OPEN
6164	RELAY, 4P TO PLBM-AC2	FAILS OPEN
6165	RELAY, 4P TO PLBM-AC2	FAILS CLOSED
6166	RELAY, 4P TO PLBM-AC2	FAILS CLOSED
6167	RELAY, 4P TO PLBM-AC2	FAILS OPEN
6168	RELAY TO PLBD AC2	FAILS OPEN
6171	RELAY TO PLBD AC2	FAILS OPEN
6172	RELAY, 4P TO PLBM-AC2	FAILS OPEN
6173	RELAY, 4P TO PLBM-AC2	FAILS CLOSED
6174	RELAY, 4P TO PLBM-AC2	FAILS CLOSED
6175	RELAY, 4P TO PLBM-AC2	FAILS OPEN
6212	FUSE, 80A TO INV 3 A	FAILS OPEN
6213	FUSE, 80A TO INV 3 B	FAILS OPEN
6214	FUSE, 80A TO INV 3 C	FAILS OPEN
6273	DIODE, BLOCKING 1A (TO 3 A RESET)	SHORTS
6275	DIODE, BLOCKING 1A (TO 3 B RESET)	SHORTS
6277	DIODE, BLOCKING 1A (TO 3 C RESET)	SHORTS
6302	FUSE, 3A TO AC BUS 3 A	FAILS OPEN
6303	FUSE, 3A TO AC BUS 3 B	FAILS OPEN
6304	FUSE, 3A TO AC BUS 3 C	FAILS OPEN
6328	CIRCUIT BREAKER TO FMCA-3	FAILS OPEN
6330	CIRCUIT BREAKER TO MMCA-2	FAILS OPEN
6332	CIRCUIT BREAKER TO MMCA-4	FAILS OPEN
6334	CIRCUIT BREAKER TO AMCA-3	FAILS OPEN
6336	RELAY TO PLBD AC3	FAILS OPEN
6338	RELAY TO PLBD AC3	FAILS OPEN
6340	RELAY TO PLBD AC3	FAILS OPEN
6342	RELAY TO PLBD AC3	FAILS OPEN
6344	RELAY, 4P TO PLBM-AC3	FAILS OPEN
6345	RELAY, 4P TO PLBM-AC3	FAILS CLOSED
6346	RELAY, 4P TO PLBM-AC3	FAILS OPEN
6347	RELAY, 4P TO PLBM-AC3	FAILS CLOSED
6348	RELAY, 4P TO PLBM-AC3	FAILS OPEN
6349	RELAY, 4P TO PLBM-AC3	FAILS CLOSED
6350	RELAY, 4P TO PLBM-AC3	FAILS OPEN
6351	RELAY, 4P TO PLBM-AC3	FAILS CLOSED
6352	RESISTOR, 1.2K 2W (TO MEC #1)	FAILS OPEN
6353	RESISTOR, 1.2K 2W (TO MEC #1)	FAILS OPEN
6354	RESISTOR, 1.2K 2W (TO MEC #2)	FAILS OPEN
6355	RESISTOR, 1.2K 2W (TO MEC #2)	FAILS OPEN
6362	RPC, 10A TO MEC #2	FAILS OPEN
6364	RPC, 10A TO MEC #2	FAILS OPEN

APPENDIX D (CONT'D)

POTENTIAL CRITICAL ITEMS (CONT'D)

MDAC-ID	ITEM	FAILURE MODE
-----	----	-----
6366	RPC, 10A TO MEC #1	FAILS OPEN
6368	RPC, 10A TO MEC #1	FAILS OPEN
6370	DIODE, ISOLATION 12A (TO CONT BUS CA1)	FAILS OPEN
6373	DIODE, ISOLATION 12A (TO CONT BUS CA2)	FAILS OPEN
6374	DIODE, ISOLATION 12A (TO CONT BUS CA3)	FAILS OPEN
6377	DIODE, ISOLATION 12A	FAILS OPEN
6378	DIODE, ISOLATION 12A	FAILS OPEN
6530	HYBRID DRIVER TYPE I TO APCA-1	FAILS OFF
6532	HYBRID DRIVER TYPE I TO APCA-1	FAILS OFF
6534	HYBRID DRIVER TYPE I	FAILS OFF
6536	HYBRID DRIVER TYPE I	FAILS OFF
6538	HYBRID DRIVER TYPE II TO APCA-1 & APCA-3	FAILS OFF
6540	HYBRID DRIVER TYPE II TO APCA-1 & APCA-3	FAILS OFF
6542	HYBRID DRIVER TYPE II TO APCA-2 & APCA-3	FAILS OFF
6544	HYBRID DRIVER TYPE II TO APCA-2 & APCA-3	FAILS OFF
6546	HYBRID DRIVER TYPE V TO HYBRID DRIVER TYPE II	FAILS OFF
6548	HYBRID DRIVER TYPE V TO HYBRID DRIVER TYPE II	FAILS OFF
6550	HYBRID DRIVER TYPE V TO HYBRID DRIVER TYPE II	FAILS OFF
6552	HYBRID DRIVER TYPE V TO HYBRID DRIVER TYPE II	FAILS OFF
6562	RESISTOR, 15K TO ALCA-3	FAILS OPEN
6563	RESISTOR, 15K TO ALCA-3	FAILS OPEN
6564	RESISTOR, 15K TO ALCA-3	FAILS OPEN
6565	RESISTOR, 15K TO ALCA-3	FAILS OPEN
6586	RPC, 20A TO ORB BUS C	FAILS OFF
6588	RPC, 20A TO ORB BUS C	FAILS OFF
6590	RPC, 20A TO ORB BUS C	FAILS OFF
6592	RPC, 20A TO ORB BUS C	FAILS OFF
6602	DIODE TO ORB BUS C	FAILS OPEN
6604	DIODE TO ORB BUS C	FAILS OPEN
6606	DIODE TO ORB BUS C	FAILS OPEN
6608	DIODE TO ORB BUS C	FAILS OPEN
6622	RELAY TO OIA BUS	FAILS TO TRANSFER
6623	RELAY TO OIA BUS	INADVERTENT TRANSFER
6624	RELAY TO OIA BUS	FAILS TO TRANSFER
6625	RELAY TO OIA BUS	INADVERTENT TRANSFER
6626	RELAY TO OIB BUS	FAILS TO TRANSFER
6627	RELAY TO OIB BUS	INADVERTENT TRANSFER
6628	RELAY TO OIB BUS	FAILS TO TRANSFER

APPENDIX D (CONT'D)

POTENTIAL CRITICAL ITEMS (CONT'D)

MDAC-ID -----	ITEM -----	FAILURE MODE -----
6629	RELAY TO OIB BUS	INADVERTENT TRANSFER
6648	SWITCH, PUSHBUTTON (ET SEP)	FAILS ON
6649	SWITCH, PUSHBUTTON (ET SEP)	FAILS OFF
6650	SWITCH, PUSHBUTTON (SRB SEP)	FAILS ON
6651	SWITCH, PUSHBUTTON (SRB SEP)	FAILS OFF
6652	SWITCH, TOGGLE 3P2P LEVER LOCK (ET SEP SLCT)	FAILS OFF
6653	SWITCH, TOGGLE 3P2P LEVER LOCK (ET SEP SLCT)	FAILS ON
6654	SWITCH, TOGGLE 3P2P LEVER LOCK (ET SEP SLCT)	FAILS OFF - SHORTS POLE TO POLE OR GND
6655	SWITCH, TOGGLE 3P2P (SRB SEP SLCT)	FAILS OFF
6656	SWITCH, TOGGLE 3P2P (SRB SEP SLCT)	FAILS ON
6657	SWITCH, TOGGLE 3P2P (SRB SEP SLCT)	FAILS OFF - SHORTS POLE TO POLE OR GND
6660	HYBRID DRIVER TYPE III TO ET TUMBLE CKT	FAILS ON
6662	HYBRID DRIVER TYPE III TO ET TUMBLE CKT	FAILS ON
6664	MASTER EVENTS CONTROLLER #1 - CRITICAL COMMANDS	INADVERTENT TRANSFER
6666	MASTER EVENTS CONTROLLER #2 - CRITICAL COMMANDS	INADVERTENT TRANSFER
6668	MASTER EVENTS CONTROLLER #1 - NON-CRITICAL COMMANDS	INADVERTENT TRANSFER
6670	MASTER EVENTS CONTROLLER #2 - NON-CRITICAL COMMANDS	INADVERTENT TRANSFER

Independent Orbiter Assessment
Analysis of the EPD&C Subsystem

1.0 EXECUTIVE SUMMARY

The McDonnell Douglas Astronautics Company (MDAC) was selected in June 1986 to perform an Independent Orbiter Assessment (IOA) of the Failure Modes and Effects Analysis (FMEA) and Critical Items List (CIL). ~~Direction was given by the STS Orbiter and GFE Projects Office to perform the hardware analysis using the instructions and ground rules defined in NSTS 22206, Instructions for Preparation of FMEA and CIL, 10 October 1986.~~ The IOA approach features a top-down analysis of the hardware to determine failure modes, criticality, and potential critical items. To preserve independence, this analysis was accomplished without reliance upon the results contained within the NASA FMEA/CIL documentation. This report documents ~~(Appendix C)~~ the independent analysis results corresponding to the Orbiter Electrical Power Distribution and Control (EPD&C) hardware.

The EPD&C hardware performs the functions of distributing, sensing, and controlling 28 volt DC power and of inverting, distributing, sensing, and controlling 117 volt 400 Hz AC power to all Orbiter subsystems from the three fuel cells in the Electrical Power Generation (EPG) subsystem. ~~The EPD&C subsystem hardware components were grouped and analyzed according to their physical location in their hardware assemblies, as follows.~~

- o Main DC Distribution Assemblies (MDDA) 1, 2, and 3
- o Mid Power Control Assemblies (MPCA) 1, 2, and 3
- o Mid Motor Control Assemblies (MMCA) 1, 2, 3, and 4
- o Aft Power Control Assemblies (APCA) 4, 5, and 6
- o Aft Power Control Assemblies (APCA) 1, 2, and 3
- o Aft Load Control Assemblies (ALCA) 1, 2, and 3
- o Aft Motor Control Assemblies (AMCA) 1, 2, and 3
- o Forward Power Control Assemblies (FPCA) 1, 2, and 3
- o Forward Load Control Assemblies (FLCA) 1, 2, and 3
- o Forward Motor Control Assemblies (FMCA) 1, 2, and 3
- o AC Generation & Distribution Assemblies (AGDA) 1, 2, and 3
- o Flight Deck Panel Controls & Displays (FDPC&D)
- o Mid Deck Panel Controls & Displays (MDPC&D)
- o Master Event Controllers, Annunciator Control Assemblies, and Current Sensors (MISC)

The IOA analysis process utilized available EPD&C hardware drawings and schematics for defining hardware assemblies, components, and hardware items. Each level of hardware was evaluated and analyzed for possible failure modes and effects. Criticality was assigned based upon the severity of the effect for each failure mode.

Volume 2 continues the presentation of IOA analysis worksheets and contains the potential critical items list.

Figure 1 presents a summary of the failure criticalities for each of the fourteen subdivisions of the EPD&C. A summary of the number of failure modes, by criticality, is also presented below with Hardware (HW) criticality first and Functional (F) criticality second.

Summary of IOA Failure Modes By Criticality (HW/F)							
Criticality :	1/1	2/1R	2/2	3/1R	3/2R	3/3	TOTAL
Number :	12	136	-	478	69	976	1671

For each failure mode identified, the criticality and redundancy screens were examined to identify critical items. A summary of Potential Critical Items (PCIs) is presented as follows:

Summary of IOA Potential Critical Items (HW/F)						
Criticality :	1/1	2/1R	2/2	3/1R	3/2R	TOTAL
Number :	12	136	-	292	28	468

Of the one thousand six hundred seventy-one (1671) failure modes analyzed, nine (9) single failures were determined to result in loss of crew or vehicle. Three (3) single failures unique to intact abort were determined to result in possible loss of the crew or vehicle. A possible loss of mission could result if any of one hundred thirty-six (136) single failures occurred. Six (6) of the criticality 1/1 failures are in two rotary and two pushbutton switches that control External Tank and Solid Rocket Booster separation. The other six (6) criticality 1/1 failures are fuses, one each per Aft Power Control Assembly (APCA) 4, 5, and 6 and one each per Forward Power Control Assembly (FPCA) 1, 2, and 3, that supply power to certain Main Propulsion System (MPS) valves and Forward Reaction Control System (RCS) circuits.